• PAINT INDUSTRY CONVENTION EXTRA •

Oil, Paint and Drug Reporter

November 16, 1933
Volume 124. No. 22

The Market Authority Since 1871
Chemicals-Dyestuffs-Drugs-Paints-Oils-Fertilizers

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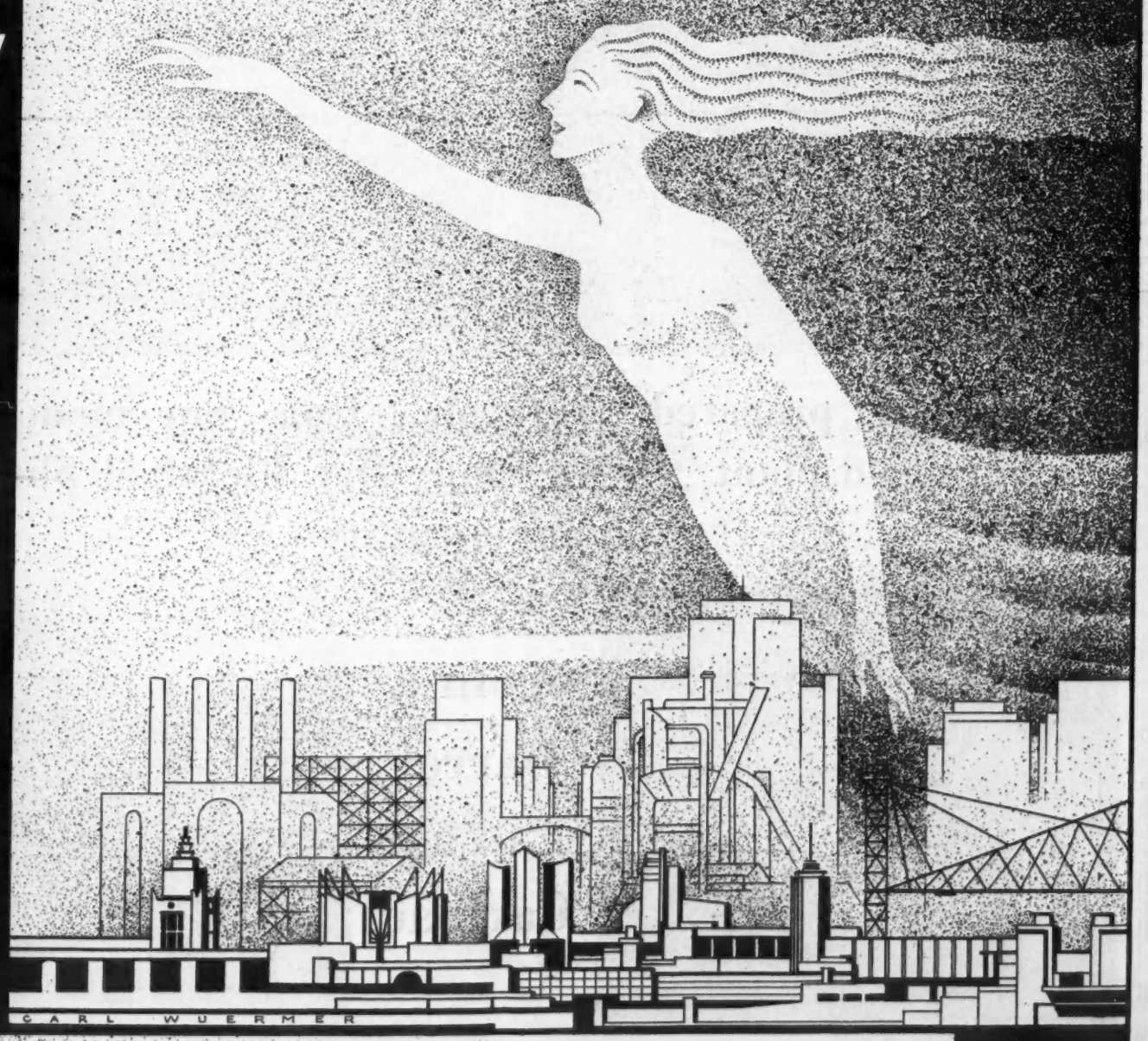

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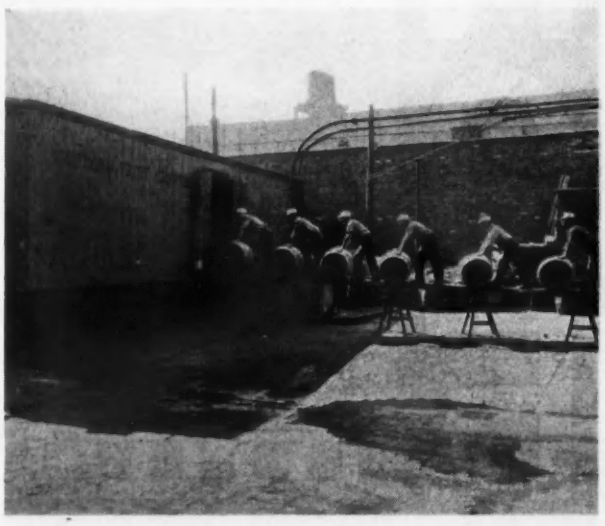

THE MANTROSE CORPORATION

BROOKLYN NEW YORK

Manufacturers of Vacuum dried *Quality* Bleached Shellac and Importers of Orange Gum Shellac for all purposes

Oil, Paint and Drug Reporter

The Market Authority Since 1871
Chemicals-Dyestuffs-Drugs-Paints-Oils-Fertilizers

Founded October 18, 1871, by William O. Allison

Issued weekly; mailed every Saturday, under publication date of the following Monday. Published at 12 Gold Street, New York, by

Oil, Paint and Drug Reporter, Inc.

Harry J. Schnell, President and Treasurer; Frank V. Baldwin, Vice-President; Daniel G. Bogert, Secretary.

SUBSCRIPTION TERMS: For the United States, $5.00 per annum; Canada, and other foreign countries, $10.00. Single copies, 15 cents each. All remittances should be made payable to the OIL, PAINT AND DRUG REPORTER, INC.

Advertising Rates furnished upon application

Questionable or undesirable advertising will not be accepted.

The OIL, PAINT AND DRUG REPORTER incorporates the following publications: *Drug, Paint and Oil Trade, New York Drug Bulletin, New York Druggists' Price Current, Soap Makers' Journal, Oil and Paint Review, Weekly Drug News, International Petroleum Reporter*

Entered at the Post-Office at New York as second-class matter under the Act of Congress of March 8, 1870

SPECIAL NOTICE:—This issue of the Oil, Paint and Drug Reporter is an extra number and is sent to all subscribers without additional charge.

Volume 124. No. 22 | Thursday, November 16, 1933 | 12 Gold St., New York

The Paint, Varnish, and Lacquer Industry Reorganizes

The national associations of the paint, varnish, and lacquer industry, meeting in the Edgewater Beach Hotel, Chicago, from Thursday, October 26, to Wednesday, November 1, set up a new order of things to replace the old.

The National Paint, Varnish and Lacquer Association was formed, with Ernest T. Trigg as president on a full-time basis and a constitution which makes it pre-eminently a manufacturers' organization. This single trade body succeeds the American Paint and Varnish Manufacturers' Association, established seven years ago by amalgamation of much older separate paint and varnish groups, and the National Paint, Oil and Varnish Association, which had been in existence forty-six years.

Part of the constitution and by-laws will be the code of fair competition, signed in Washington by President Roosevelt October 31. Included in this code are two sections:—the mandatory clauses under the national industrial recovery act and the trade practice clauses designed to eliminate misbranding, mislabeling, false advertising, price-cutting, and other abuses which menace the legitimate transaction of business on a profit-making basis.

In the new set-up, administration of the association will rest with a president, a vice-president, a treasurer, five regional vice-presidents, and an executive committee; the latter is to be composed of the president, the vice-president, the treasurer, and eighteen selected representatives of paint manufacturers, varnish manufacturers, lacquer manufacturers, water paint manufacturers, and materials and supplies groups. By the system of elections to be followed, these interests always will be assured of adequate representation in the governing body; also, by the provision for a three-year term with six new elections each year, continuity of office will be secured, thus making the executive committee a practical successor to the educational bureau, formerly the "planning board" for both of the old associations.

Mr. Trigg is severing his connection with John Lucas & Co., of which he has been president, and will take charge at national headquarters in the Gregg Memorial building, 2201 New York avenue N. W., Washington. Helmer A. Melum, vice-president of Benjamin Moore & Co., Chicago, is vice-president of the new national association, while Charles J. Roh, who was treasurer of the old associations and of the educational bureau for the past four years, will serve the new organization in the same capacity.

The code of fair competition, after becoming effective November 15, will be administered, according to its own terms, "through the association by a board to be immediately created and to be known as the 'Paint Industry Recovery Board.'" This board will be composed of "not more than three members without voting power to be appointed by the president, the eight members of the present general code committee, twenty members representing commodity groups and twenty members representing communities." The commodity groups are to be composed of five men each from the paint manufacturing, varnish manufacturing, lacquer manufacturing, and kalsomine and water paint manufacturing groups.

Elective members of the above board already have been named by a vote of the entire industry, without regard to association affiliation. The names of its members are published in this issue of the OIL, PAINT AND DRUG REPORTER. There was an informal meeting of the board in Chicago prior to the industry conventions, at which plans for procedure were tentatively adopted. These were to be submitted to the NRA Administrator in Washington for approval, it was hoped, by the time of the code's effective date. If approved as outlined now, complaints of violation will be handled by key men in various communities and only in event of failure to settle them locally will they be forwarded to headquarters in Washington. However, full records of every case will be filed with headquarters.

Another feature of the new paint, varnish, and lacquer industry set-up, as approved at the Chicago meetings, was the provision for two national committees:—One to be known as the industrial sales committee and the other as the trade sales committee. The chairman of each is to be appointed annually by the president, while the members are to be members of regional or city associations who are qualified experts in industrial sales or trade sales as the case may be. Establishment of such committees will, it is felt, provide an opportunity for discussion and solution of sales problems which never before were adequately handled by the association.

As a result of clauses in the code dealing with selling below cost and because of the importance of plant managers and superintendents in the control of this phase, there is to be a closer relationship between the officers of the National Paint, Varnish and Lacquer Association and those of the Federation of Paint and Varnish Production Clubs. This latter group met in the Edgewater Beach Hotel, October 26 to 28, and elected Francis C. Atwood, Boston, as president. Mr. Atwood and a committee of the federation are already at work on the task involved in establishing a source of authoritative figures which will serve to determine "the seller's total market replacement cost of raw materials," in accordance with stipulations by the code that such figures be issued monthly, or oftener, through the association.

Membership in the new association is to be divided into five classes and, generally speaking, "shall consist of individuals, firms, corporations who are manufacturers and/or wholesalers of paints, varnishes, lacquers, water paints and kindred products; and individuals, firms, corporations who are manufacturers and/or wholesalers of materials used in connection with the manufacture and/or application of paints, varnishes, lacquers, water paint and kindred products."

Regional or city associations affiliated with the national body will play an important part in the new organization.

Dues for the class A and B members are arranged on a sliding scale based on domestic sales, and in their determination, according to the statement of Charles J. Roh, chairman of the amalgamation committee and treasurer of the old and new groups, the small manufacturer was favored.

The sessions at which the old groups disbanded and the new association was formed were crowded not only by members but by others who had accepted a broadcast invitation to attend.

The seventh annual meeting of the American Paint and Varnish Manufacturers' Association was called to order on Monday morning, October 30, by James F. Kurfess, Louisville, president. After formal addresses and reports, fully recorded in the pages of this issue, Mr. Roh presented the report, with explanations, for the amalgamation committee. Formal resolutions of dissolution of this association were not adopted until Tuesday morning.

Monday afternoon, Samuel R. Matlack, Philadelphia, president of the National Paint, Oil and Varnish Association, called that body to order for dissolution proceedings. Mr. Matlack gave his annual address; Thomas J. McFadden, appointed general manager to succeed the late George V. Horgan, gave a brief report; and after other routine matters were cleared up, Mr. Roh summarized his report of the morning. Mr. McFadden, in his legal capacity, and M. Q. Macdonald, counsel to the unfair competition bureau, clarified the legal position of the old and the new organizations, as the former were voted out of existence and the latter came into being.

Vote on the new association came actually Tuesday morning, October 31, Mr. Roh presenting the formal resolutions, and Frank P. Cheesman, long chairman of the constitution and by-laws committee of the old associations, presenting the new document for adoption.

That afternoon, Mr. Trigg, in a masterly four-hour address, expounded the code of fair competition as it had been worked out by his committee in behalf of the entire industry. Throughout his long analysis, there was an air of suspense in the hall, as word was expected momentarily of presidential signing of the document. Word of that historic event did not come until after Mr. Trigg had finished.

Election of Mr. Trigg and other officers took place Wednesday, on which day, also, conferences were held on trade sales and on industrial sales, Frank Bownes, Chelsea, Mass., presided at the former, and Joseph R. Esposito, Cincinnati, at the latter. Every phase of unfair competitive practices in both realms of the industry were considered by the speakers. The points brought up at these conferences will be the problems for which solution will be sought as the new national committees on these subjects begin their functioning.

An informal banquet Wednesday evening brought the historic week to a close.

"AMERICAN" Alcohol is the highest grade of Industrial Alcohol possible to manufacture. Good basic material will add economy to your program and increase your sales volume.

CONSIDER these four factors when purchasing your requirements of Commercial Alcohol:

1. Exacting laboratory tests of all denaturing material used in compounding "AMERICAN" Completely Denatured Alcohol, "EVERCLEAR" Specially Denatured Alcohol and SOLVENT NO. 1.
2. Standards of quality always maintained at four plants equipped and operated for the uniform production of Alcohol.
3. Strategically located plants and warehouses to make "AMERICAN" readily available.
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The New Official Families

National Paint, Varnish and Lacquer Association

President

Ernest T. Trigg, of John Lucas & Co., Philadelphia.

Vice-President

H. A. Melum, of Benjamin Moore & Co., Chicago.

Treasurer

Charles J. Roh, of the Murphy Varnish Company, Newark, N. J.

Regional Vice-Presidents

New England Zone

Frank Bownes, of the Frank Bownes Company, Chelsea, Mass.

Eastern Zone

Ralph H. Everett, of the Keystone Varnish Company, Brooklyn, N. Y.

Central Zone

Dwight P. Joyce, of the Glidden Company, Cleveland.

Southern Zone

Harold N. Cooledge, of F. J. Cooledge & Sons, Atlanta, Ga.

Western Zone

Oliver S. Orrick, of the General Paint Corporation, Los Angeles.

Executive Committee

Representing Paint Manufacturing
(To serve one year)

Dr. R. A. Plumb, of the Truscon Laboratories, Detroit.

(To serve two years)

Samuel R. Matlack, of George D. Wetherill & Co., Philadelphia.
Herbert W. Rice, of the U. S. Gutta Percha Paint Company, Providence, R. I.
Frank L. Sulzberger, of the Enterprise Paint Company, Chicago.

Helmer A. Melum

Vice-President, National Paint, Varnish and Lacquer Association

Helmer A. Melum, vice-president of the National Paint, Varnish and Lacquer Association, is vice-president in charge of the Chicago office of Benjamin Moore & Co., with which concern of national scope he has spent his entire business career.

Mr. Melum was born in Chicago April 13, 1886, and after attending Chicago and Oak Park schools he completed his education at Lewis Institute. After graduation from this Chicago school, in 1902, he at once entered the employ of Benjamin Moore & Co., as that type of office boy inevitably fated to go through to the top. He was tall and strong and a hard worker, and successively mastered the details of each job in various departments. December 1, 1919, he was made resident manager of the Chicago branch, one of the most important of the Moore company's. He was made vice-president several years later.

Early in his work, Mr. Melum decided that membership in a trade group was an essential part of development of a paint executive, and he joined the Chicago Paint, Oil and Varnish Club. He served as treasurer of the club and was then elected to the presidency. In his official capacity, he attended meetings of the national paint and varnish organizations and became an active participant in their activities. He has been a director of the American Paint and Varnish Manufacturers Association.

Mr. Melum is a member of the Chicago Athletic Association, of the Oak Park Country Club, and other recreational groups, and is a member of the First Congregational Church of Oak Park.

In 1910, Mr. Melum and Miss Nettie Mallen were married. They have two sons, H. William Melum, now eighteen years old, and Jerald H. Melum, fourteen years old. The family residence is at River Forest, Ill., a suburb of Chicago.

Ernest T. Trigg

President, National Paint, Varnish, and Lacquer Association

Ernest T. Trigg in assuming the presidency of the National Paint, Varnish and Lacquer Association relinquished the presidency of John Lucas & Co., Philadelphia, with which he has been associated since 1908. Mr. Trigg's election as directing head of the organization successor to the old paint, varnish, and lacquer trade groups is recongition not only of his recent code committee work but of long years of labor in the associational fields.

As long ago as the Dakota paint cases, Mr. Trigg realized the need for co-ordinated, co-operative work if the industry were to achieve its proper development. While still a young man he became active on the old advertising committee, out of

(Continued on page 41)

Charles J. Roh

Treasurer, National Paint, Varnish and Lacquer Association

Charles J. Roh, treasurer of the National Paint, Varnish and Lacquer Association, is president of the Murphy Varnish Company, Newark, N. J. He has been prominent in the affairs of paint and varnish groups for years, but achieved particular eminence in 1930 by reason of his work on the refinancing plan adopted by the two associations at their Toronto conventions that year. E. T. Trigg was chairman of this reorganization committee. Thereafter, Mr. Roh became treasurer of the American Paint and Varnish Manufacturers Association, the National Paint, Oil and Varnish Association, and of the educational bureau, all dissolved. In earlier years, Mr. Roh was president of the New York Paint, Oil and Varnish Club and of the National Varnish Manufacturers Association. He was chairman of the save the surface committee of the National Paint, Oil and Varnish Association in 1923.

Mr. Roh has been with the Murphy Varnish Company since 1900, previously having been a press boy in a jewelry factory, a clerk in a grocery store, and carpenter's apprentice. After seven years in the home office, Mr. Roh was sent to Boston as sales manager of the Murphy branch there,

(Continued on page 41)

N. P. V. & L. A. Executive Committee

Representing Paint Manufacturing
(Continued)

(To serve three years)

L. P. Moore, of Benjamin Moore & Co., New York.
Ludington Patton, of the Pittsburgh Plate Glass Company, Milwaukee.
Elliott S. Phillips, of the Devoe & Raynolds Company, New York.
William Richter, of E. I. du Pont de Nemours & Co., Wilmington, Del.

Representing Varnish Manufacturing
(To serve two years)

James B. Lord, of the Boston Varnish Company, Boston.
Wells Martin, of the Martin Varnish Company, Chicago.

(To serve three years)

H. E. Webster, of Pratt & Lambert, Inc., Buffalo.

Representing Lacquer Manufacturing
(To serve one year)

J. Heath Wood, of the Standard Varnish Works, Chicago.
O. J. S. de Brun, of the Egyptian Lacquer Manufacturing Company, New York.
W. C. Dabney, of the Jones-Dabney Company, Louisville.

Representing Water Paint Manufacturing
(To serve one year)

Stanley C. Dunning, of the Muralo Company, Staten Island, N. Y.

Representing Commodity Group
(To serve one year)

Dwight W. Figgis, of the American Can Company, New York.

(To serve two years)

M. L. Havey, of the New Jersey Zinc Company, New York.

(To serve three years)

Fred M. Carter, of the National Lead Company, New York.

Federation of Paint and Varnish Production Clubs

President

F. C. Atwood, of the Atlantic Gypsum Products Company, Boston.

Vice-President

Roy B. Anderson, of the Brooklyn Varnish Company, Brooklyn.

Secretary

George B. Heckel, Philadelphia.

Treasurer

R. C. Stark, of Pratt & Lambert, Inc., Buffalo.

Members of the Executive Board

Clarence W. Clark, of E. I. du Pont de Nemours & Co., Everett, Mass.
G. Sutherland, of the Davis Company, Baltimore.
P. S. Eddy, of the Porter Paint Company, Louisville.

Francis C. Atwood

President, Federation of Paint and Varnish Production Clubs

Francis C. Atwood, newly elected president of the Federation of Paint and Varnish Production Clubs, is technical director of the Atlantic Gypsum Products Company and vice-president of the Atlantic Research Associates, which is the development organization for the former company. Mr. Atwood long has been, not only an indefatigable worker in the research field, but active in the New England club and in the federation and an ardent worker for full recognition of the plant manager

(Continued on page 41)

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DUTCH BOY AND CARTER WHITE-LEAD

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Basic Lead Sulphate, Blue and White
Linseed Oil Flatting Oil

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ORGANIZATION MEETING

National Paint, Varnish and Lacquer Association

Chicago, Ill., October 31 and November 1, 1933

Tuesday, October 31

First General Industry Meeting, Tuesday Forenoon

(The general meeting of the paint, varnish, and lacquer industry for the purpose of amalgamating the National Paint, Oil and Varnish Association and the American Paint and Varnish Manufacturers' Association, was convened in its first session at 10:35 a.m., October 31, by Samuel R. Matlack, N. P., O. & V. A president.)

Chairman Matlack: It gives me pleasure to call together the first meeting of the general association. It is a privilege to call this meeting together to form the new deal, to get down ready to do new work in a new way.

I think the first matter of business on the program is the report of the nominating committee, which is just a preliminary report. Mr. Horace Felton will bring in that report.

Nominations

Horace Felton: Before I give the report of the nominating committee, I would like to make just a few observations to acquaint you with some of the problems which have confronted us. Someone has written that new occasions demand new duties, and it has been that situation which has confronted your committee. In the ticket which we are about to present, we want you to know we have given our best thought and our best judgment to it. In fact, we have worked over the program for some weeks in order that we might present to you the very best which the industry has to offer.

You realize, of course, that we are today working under different conditions, we are working under different problems, and it has been necessary, therefore, to change the scope of our work in order to fit in with these problems. We are endeavoring to recognize each subdivision of the industry because we seem to be developing today along certain very definite lines of cleavage. You will find, for instance, that in making our report we are recommending for your consideration representatives to cover the paint manufacturing industry, we are recommending others to cover varnishing manufacturing, and we are recommending others to cover lacquer and industrial finishing. You will hear more in our program tomorrow about the trade sales problems of the industry and the industrial finishing problems. The nominating committee desires to recognize this situation and is suggesting three candidates to cover the industrial finishing group.

You will also notice as the names are presented that the committee has made a sincere effort to recognize men in the industry who perhaps have not served before in official capacity, or have not served for some time, so keeping that in mind, you will find that we have nominated for your consideration five new faces. Our by-laws require that 18 shall be nominated for our executive committee. Since we are nominating five new faces, that seems to give a very fine balance, carrying on 13 of the old men who have worked aggressively for the industry, men who are tried and proven, and now we are associating with them five men who have not worked in that capacity before and who we feel will supplement very well the fine efforts which those 13 men are making.

For Executive Committee

With those preliminary remarks, then, I desire to announce the candidates for the executive committee.

Representing Paint Manufacturing

R. A. Plumb, to serve for one year.
S. R. Matlack, to serve for two years.
H. W. Rice, to serve for two years.
F. L. Sulzberger, to serve for two years.
L. T. Moore, to serve for three years.
Ludington Patton, to serve for three years.
Elliot S. Phillips, to serve for three years.
William Richter, to serve for three years.

Representing Varnish Manufacturing

James B. Lord, to serve for two years.
Wells Martin, to serve for two years.
H. E. Webster, to serve for three years.

Representing Lacquer Manufacturing (Industrial Finishing)

J. Heath Wood, to serve for one year.
O. J. S. de Brun, to serve for one year.
Wm. C. Dabney, to serve for three year.

Representing Kalsomine and Water Paint Manufacturing

Stanley C. Dunning, to serve for one year.

Representing Commodity Group

D. W. Figgis...To serve for one year
M. L. Havey... " " " two years
Fred M. Carter. " " " three years

For Treasurer

For your treasurer we nominate Charles J. Roh.

For Regional Vice-Presidents

Before I announce the personnel of the regional vice-presidents, I desire to call your attention to the fact that we are creating under this situation five zones in the United States and we are suggesting the inclusion in this of a new zone, the New England zone. I therefore, have the honor to nominate as regional vice-presidents, the following:—

New England zone.....Frank Bownes
Eastern zone.....R. H. Everett
Central zone.....Dwight P. Joyce
Southern zone.....Harold N. Cooledge
Western zone.....Oliver S. Orrick

For Vice President

As Vice-President of the association I have the honor to present the name of H. A. Melum.

For President

Before I announce the candidate for the President, I would like to make just a few remarks.

It seems that we are now about to attain an objective which many of us have had in mind for a very long time: namely, the possibility of securing a president who would devote his full time to the work of this association. I do not think is is necessary, nor do I think it within the province of the chairman of the executive committee, to give the reasons why this should be necessary. I think the reasons are obvious to everyone in the room. However, I desire to say this regarding the candidate whom we are about to present.

He is a man who has given of himself unselfishly to our industry for many years. He has been most active in our behalf for a period now of almost nine months, giving of himself perhaps as no man has done before in this industry. He is a man of great accomplishments. He is a man who understands the problems of our industry perhaps as few other men understand them, and I have, therefore, the great honor to present for your consideration the name of Ernest T. Trigg.

Chairman Matlack: There is no formal action to be taken at this time on this report of the nominating committee. This will be taken up tomorrow afternoon at the closing session of the convention. Are there any remarks or suggestions that would come before that?

Mr. Felton: Mr. President, I would like to call attention to the fact that our by-laws provide for the nomination from the floor of candidates if any one is so minded. That would come at this time if anyone cares to make a further nomination.

Chairman Matlack: Gentleman, you have heard the report of the nominating committee. As you know, additional names can be added from the floor.

Starting at the head of the ticket, we have one nominee. Have you any other nominations to make? Vice President? Regional Vice Presidents? Representatives for the executive committee? from the paint group? The varnish group? Lacquer manufacturers? Kalsomine or water paint?

It is certainly nice to feel that the nominating committee have done such a wonderful job and that the entire association sems to be satisfied with the names that have been put up and do not care to add any more to the list. Horace, I think you have done a wonderful job.

Charles J. Roh
Chairman on Amalgamation

Mr. Felton: Mr. President, I think it would be in order to pass a motion that the nominations be closed in order that our record may be clear, and I think it is within my province to make that motion, and I so move.

(The motion was regularly seconded.)

Chairman Matlack: It has been moved and seconded that the nominations for officers and executive committee be closed. All in favor signify the same by saying "aye." Opposed. Carried and so ordered.

Amalgamation Formalities

The next order of business is the presentation of resolutions by Charles J. Roh.

Mr. Roh: To set in motion the machinery for amalgamation, we sought the advice of our own legal talent at Washington, Mr. McFadden and Mr. Macdonald, and through them secured a company that has provided us with the machinery to incorporate the new organization.

There are certain formal resolutions that are necessary to place the matter entirely before us, and I will now read those resolutions:—

Resolutions

Whereas, recent events make it desirable to amalgamate the National Paint, Oil and Varnish Association, Inc., and the American Paint and Varnish Manufacturers' Association, Inc., to present to the industry and the country a united front of the manufacturers and wholesalers of paint, varnish, lacquer and kindred products, and manufacturers of materials used in connection with the manufacture of paints, varnishes, lacquers and kindred products; and

Whereas, the members of the said associations have duly recorded their agreement, in principle, with the report of an amalgamation committee recommending the dissolution of said associations and the creation of a new association to succeed them;

Resolved, That subject to the adoption at this meeting or adojurnment thereof, of a plan of organization and by-laws for such proposed successor association, the individuals, firms and corporations present, who are now members of the American Paint and Varnish Manufacturers' Association, Inc., and the National Paint, Oil and Varnish Association, Inc., do hereby associate themselves in a voluntary non-stock, non-profit association to be known as the National Paint, Varnish and Lacquer Association, to the end that the industry may be served pending the creation and organization of an incorporated association, and that the creation and organization of such association be facilitated.

Provided, however, that this action shall not take effect until November 2, 1933.

I submit the resolution, Mr. President, for action.

(The motion was seconded by F. P. Cheesman.)

Chairman Matlack: Gentlemen, you have heard the resolution, which already has been seconded. It is now before you for any discussion which you may care to have.

(The question was called for.)

Chairman Matlack: All in favor signify the same by saying "aye"; opposed "no." It is unanimously carried, Mr. Roh.

Mr. Cheesman Takes Charge

The next regular order of business is to consider the constitution and by-laws, which has been prepared by a committee, and they are now ready to report. Mr. Cheesman, the father of all by-laws, constitutions, and who guards them very carefully, will now bring forward the new by-laws.

Mr. Cheesman: Gentlemen, I must recite at least one poem. Being a grandfather now I think I am entitled to that privilege. In the language of a well-known poet, whose name I have forgotten but whom you all know, I want to mention:—

Keep not your kisses for my cold, dead brow,
The way is dreary, let me feel them now.

When dreamless rest is mine, I shall no longer need the sympathy for which I plead this morning.

Constitution and By-Laws of the National Paint, Varnish and Lacquer Association, Inc.

Organized 1933

Whereas, recent events make it desirable to amalgamate the National Paint, Oil and Varnish Association, Incorporated, and the American Paint and Varnish Manufacturers' Association, Incorporated, to present to the industry and the country a united front of the manufacturers and wholesalers of paints, varnishes, lacquers, kindred products and manufacturers and wholesalers of materials used in connection with the manufacture and/or application of paints, varnishes, lacquers and kindred products, we do form ourselves into a new association.

Constitution

Article I

Title

The name of this organization shall be the National Paint, Varnish and Lacquer Association, Incorporated.

Object

The object of this association shall be to promote the welfare of the industry, to strengthen business and fraternal relations among its members, to remove evils and customs contrary to sound business principles and ethics, to safeguard the interests of the public, to subscribe to and abide by such codes of fair competition as approved by the President of the United States, which shall become a part of this constitution. The association shall not directly or indirectly restrict free and lawful competition.

Now, Admiral on the Quarterdeck, I think we should move that we start the ship of state by voting on each important paragraph as presented and then on the whole at the finish. I move the adoption of the two paragraphs just read.

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Chairman Matlack: Do I hear a second?

(The motion was seconded.)

Chairman Matlack: It has been moved and seconded that the first two paragraphs that Officer Cheesman has just read be passed at the present time. Are you ready for the motion? All in favor please signify the same by saying "aye." It is so carried.

Mr. Cheesman: The Right Admiral has no "no, no's" in his business.

Article II

Membership

Membership in this association shall consist of individuals, firms, corporations who are manufacturers and/or wholesalers of paints, varnishes, lacquers, water paints and kindred products; and individuals, firms, corporations who are manufacturers and/or wholesalers of materials used in connection with the manufacture and/or application of paints, varnishes, lacquers, water paint and kindred products.

There shall be five classes of membership, as follows:—

Class A Membership

Section 1. Individuals, firms, corporations who are manufacturers of paints, varnishes, lacquers, water paints and kindred products who support all association activities—the scientific section, unfair competition bureau, save the surface campaign, clean up and paint up campaign, traffic bureau, and such other activities in which the association may engage—paying dues on the uniform plan based upon their domestic sales of their products. Each Class A member is entitled to one vote at the association meetings and to receive all the scientific section circulars. They are entitled to membership in regional or city associations on payment of the regional or city associations dues, not including the national dues.

I move the adoption of the Class A Membership paragraph.

(The motion was seconded.)

Chairman Matlack: Gentlemen, you have heard the reading of the paragraph regarding Class A membership. Are there any remarks, questions or criticisms? Are you ready for the question?

(The question was called for.)

Chairman Matlack: All in favor please signify the same by saying "aye." Unanimously adopted.

(Mr. Cheesman continued.)

Class B Membership

Section 2. Individuals, firms, corporations who are manufacturers of materials used in connection with the manufacture and/or application of paints, varnishes, lacquers, water paints and kindred products who support all association activities—scientific section, unfair competition bureau, save the surface campaign, clean up and paint up campaign, traffic bureau, and such other activities in which the association may engage—paying dues on the uniform plan based upon their domestic sales to the industry. They shall have representation at the association meetings through regional or city association delegates as provided in the by-laws and will receive all the scientific section circulars. They are entitled to membership in each regional or city association on payment of the regional or city associations dues, not including national dues.

I move the adoption of the paragraph referring to Class B membership.

Chairman Matlack: Gentlemen, you have heard the reading of the Class B membership. Do I hear a second?

(The motion was seconded.)

Chairman Matlack: Are there any questions, suggestions or criticism? Are you ready for the question?

(The question was called for.)

Chairman Matlack: All in favor please signify the same by saying, "aye"; contrary, "no." Unanimously adopted.

I understand there is a possibility that in not calling for the "noes" on the other two, they may not carry from a legal standpoint. Would you like to have those two motions put again?

"No" from the members.)

Chairman Matlack: The "no, noes," don't go, so I have to have them.

(Mr. Cheesman continued.)

Class C Membership

Section 3. Individuals, firms, corporations who are not eligible for Class A membership or who are not Class B members, but who are members of regional or city associations affiliated with the national association and pay national dues and dues as prescribed by the regional or city Associations. They have representation at the national convention through regional or city Association delegates as provided in the by-laws.

I move, Mr. Chairman, the adoption of Class C Membership as read.

Chairman Matlack: You have heard the reading of the constitution and by-laws covering Class C Membership.

(The motion was regularly seconded.)

President Matlack: Are you ready for the question? All in favor please signify by saying "aye"; opposed "no." It is unanimously adopted.

(Mr. Cheesman continued.)

Class D Membership

Section 4. Individuals, firms, corporations who are manufacturers of paints, varnishes, lacquers, water paints and kindred products in Canada, may become members of the National Paint, Varnish and Lacquer Association and secure the scientific section circulars, on the basis of dues as provided in Section 4, Article II of the By-laws.

I move the adoption of the Class D Membership clause.

(The motion was regularly seconded.)

Chairman Matlack: It has been moved and seconded that we adopt the Class D Membership clause. Are you ready for the question? All in favor please signify the same by saying "aye"; contrary "no". It is carried unanimously.

(Mr. Cheesman continued.)

Honorary Members

Section 5. Any individual who has rendered distinguished service to the industry or to the association may, upon unanimous nomination by the executive committee, be elected an honorary member by two-thirds vote at any regular meeting of the association.

I move the adoption of the clause referring to honorary members.

(The motion was regularly seconded.)

Chairman Matlack: You have heard the clause referring to honorary memberships. Are you ready for the question? All in favor signify the same by saying "aye"; contrary "no." It is unanimously carried.

(Mr. Cheesman continued.)

Article III

Officers and Their Election

Section 1. The officers of this association shall consist of: President: The president shall be elected by the members of the association for a term not to exceed three years.

Section 2. The vice president shall be elected for one year from Class A members.

Section 3. Five (5) regional vice presidents shall be elected for one year from either Class A, B or C members of the association, one from each of the five (5) zones as designated in Article V of the Constitution.

Section 4. Treasurer: The treasurer shall be elected for one year from Class A members of the Association.

Section 5. General Manager: The executive committee shall appoint a general manager for a period not to exceed

Frank P. Cheesman
Chairman on Constitution and By-Laws

three years, or until his successor is appointed. He may or may not be a member of the Association.

Section 6. Secretaries: The executive committee may elect or appoint a secretary of the association, or secretaries, to perform such duties as may be designated by the president and/or by the executive committee or general manager.

Section 7. Honorary Offices: Other offices of honorary character may be conferred upon any member by the unanimous vote of the executive committee.

Section 8. Executive Committee: The executive committee shall consist of the president, vice president, treasurer, the retiring president (except during the first year) and eighteen elected members, twelve of whom must be paint, varnish, or lacquer manufacturers; three must be Class A members, but not necessarily manufacturers of paint, varnish, or lacquer; and three to be Class B or C members. The Class B and C members will have all the rights of other members on the executive committee except that they shall not be eligible to election as chairman or vice-chairman thereof and they shall not vote on the subjects which directly affect the paint, varnish, lacquer, water paint, and/or kindred products industry.

Section 9. Members of the executive committee shall hold office for three years, except that there shall be elected at the first meeting of the association the eighteen members as provided above, six of whom shall be elected to serve for one year; six of whom shall be elected to serve for two years; and six of whom shall be elected to serve for three years. Each group of six shall consist of four paint, varnish or lacquer manufacturers, one must be a Class A member, but not necessarily a manufacturer of paint, varnish and/or lacquer, and one must be a Class B or C member.

Section 10. The officers of the executive committee shall consist of a chairman and a vice chairman who shall be elected annually at the organization meeting of the executive committee from its membership. In no case shall such officers of the executive committee be allowed to serve for a longer term than three consecutive years.

Section 11. Election and Terms of Office: The officers, incoming members of the executive committee, shall be elected by ballot at the last session of the annual convention in accordance with the by-laws. Those receiving a majority of the votes cast shall be declared elected. They shall enter upon their duties at the close of said meeting, and shall serve until their successors are elected.

Section 12. The first officers of the association shall be elected by the incorporators.

I move the adoption of the entire Article III as just read.

(At this point there was discussion of the point that the term of office of vice-president, regional vice-presidents and treasurer had not been specified. Proper amendments were offered and adopted to set the terms at one year "or until their successors are appointed"—which makes re-election permissible. The amendments are included in the sections as published above.)

Chairman Matlack (continuing at end of discussion): That is according to your motion, Mr. Howard?

Mr. Howard: Yes, sir.

Chairman Matlack: Are you ready for the question?

(The question was called for.)

Chairman Matlack: All in favor please signify the same by saying "aye"; opposed "no." It is so carried.

Mr. Cheesman: I move the adoption of Article III as amended, Mr. President.

(The motion was seconded by Mr. Coon.)

Chairman Matlack: Are you ready for the question? All in favor of the adoption of Article III as amended please signify the same by saying "aye"; contrary "no." It is so carried.

(Mr. Cheesman continued.)

Article IV

Duties of Officers

Section 1. Duties of the President: He shall be the chief executive officer and shall be an ex-officio member of all committees. It shall be the duty of the president to preside at all meetings of the association, to make such appointments as are provided for in the by-laws, also those required by action of the association and executive committee. He shall present at the first session of the annual convention a report upon the affairs of the association, together with such matters and recommendations as may be of interest. He shall perform such other executive duties as the executive committee of the association may direct.

Section 2. Duties of the Vice-President: He shall perform all of the duties of the President in his absence and such other duties as may be assigned to him by the executive committee.

Section 3. Duties of the Regional Vice-Presidents: The regional vice-presidents shall perform such duties as may be delegated to them by the president and/or executive committee. At the request of the president it shall be the duty of the regional vice-president of each zone to officially visit any regional or city association in his zone.

Section 4. Presiding Officer: In case of the inability of the president to preside at any meeting of the association, the vice-president shall preside, or in his absence, the chairman of the executive committee, or in his absence, the vice-chairman shall be the presiding officer.

Section 5. Duties of the Treasurer: It shall be the duty of the treasurer to open such bank accounts in such banks as may be approved by the executive committe; to provide for the receipt of all monies due the association. Disbursement shall be made by voucher signed by the general manager, or in his absence by authorized representatives, as coming within the budget, and countersigned by the treasurer.

Section 6 Under the authorization of the executive committee, the treasurer shall be empowered to invest the funds of the association; to sell, convert or exchange securities or property owned by the association, and to execute any necessary documents in connection therewith.

Section 7. In the case of the death, illness, disability or absence from his office of the treasurer, any one of the following officers of the association is hereby authorized to countersign checks and otherwise to perform, ad interim, the necessary duties of the treasurer—the president, vice-president or chairman of the executive committee.

Discussion

Mr. Bennett: I am not sure that I understand that paragraph correctly. Does it provide that the treasurer shall dispose of all of the property of the association upon vote of the executive committee? That does not mean the real property of the association, I presume. That could hardly be disposed of without a vote of the association.

Chairman Matlack: I suppose it means the invested funds. I do not know.

Mr. Cheesman: It means all. It is just the same as now.

Chairman Matlack: That is the way the old by-laws read; it is the exact reading of the old by-laws. Do you feel it would be a good plan to change that?

Mr. Bennett: By the old by-laws, do you mean the National Paint, Oil and Varnish Association or the American Paint and Varnish Manufacturers Association? The American Paint and Varnish Manufacturers Association hold title to the property in Washington.

I should think that we hardly want to go to the extent of authorizing the executive committee to dispose of that property, or to instruct the treasurer to dispose of that property. The words "personal property" could be inserted there. It would cover it, would it not? The treasurer, under instructions from the executive committee, could dispose of the personal property of the association.

Chairman Matlack: Then, Mr. Bennett, you would need another clause, would you not, authorizing how the disposal of the real estate could be carried on?

Mr. Bennett: I don't think so. I think a vote of the association could take care of that. If the question ever arose, it would have to be a vote of the entire Association.

Chairman Matlack: I wonder if you would like to have the American clause on that subject read at the present time.

Mr. Shannon: (Reading.) "Under authorization of the board of directors, the treasurer shall be empowered to invest the funds of the association, to sell securities, or property owned by the association, and to execute any necessary documents in connection therewith."

A similar paragraph is already in the by-laws of the N. P. O. & V. A., giving the executive committee such authority.

Mr. Bennett: I think now is as good a time as any to correct that, and insert the word "personal" in there, so that we would start out with a clean slate, perfectly conscious of the fact that no iniquitous executive committee could dispose of our real property.

Chairman Matlack: Do you offer that as a resolution?

Mr. Bennett: I offer it as an amendment.

(The motion was seconded by Mr. Chapin.)

Mr. Cheesman: Before that is offered, I would like to say that I have just been instructed by our legal adviser that the only property which the association will probably own this year is the property in Washington; and in case the United States Government take that property over (and I understand that is a very probable thing) we could not wait to get the authorization from the entire membership, as otherwise we might get a very much lower price than if we were able to offer a price which we could under this authorization. With that before you, you can vote to suit yourself.

Chairman Matlack: Mr. Bennett, do you still want the motion put?

Mr. Bennett: I am in a state of indecision. It would seem to me that an authorization of the entire association should be necessary to dispose of that property. Could not a vote be taken by mail on the proposition, should such a situation arise?

Chairman Matlack: I can give you a personal experience of my own. During the last six months, we had a piece of ground to be sold belonging to a church and school. It had been taken over for a post office. We practically lost the sale, and at the end had to take $10,000 less than we originally would have, if we could have given immediate consent. We were tied up so that it took two men four days traveling in automobiles to get the desired results. In that time, we lost the sale of our property and then had to sell it at condemnation proceedings for $10,000 less.

Mr. Bennett: Mr. President, I didn't realize that in addition to being in the paint, varnish and lacquer business, we were also in the real estate business by force of circumstances. I withdraw the amendment.

N. D. Chapin: I seconded Mr. Bennett's amendment because I felt it was perfectly right and just. It seems to me it ought to be a part of the by-laws. If we want this association to make or pass some special resolution dealing with the situation that Mr. Cheesman says we had better do it, but let it stand for the future. I do believe Mr. Bennett's proposition is a perfectly proper one.

Joseph Kempf: I think it is customary for the board of directors of the corporation to have the power to dispose of all of the property of the corporation. I don't see why it should be any different in so far as this association is concerned. I would be in favor of the resolution standing as read.

Chairman Matlack: Are you ready to go on with the reading of the by-laws?

(Mr. Cheesman continued.)

Reading of By-Laws Resumed

Section 8. The treasurer shall keep an accurate account of all receipts and disbursements and shall submit quarterly a financial statement and operating statement covering the period from the last financial statement to the executive committee and an annual statement to the last day of September. This annual report to be audited and certified by a certified public accountant and submitted to the executive committee at its annual meeting and by them presented to the annual convention. He also shall submit to the general manager thirty days before the annual convention, a complete list of the regional or city associations holding membership in the national association with the number of their members in good standing on his books, which list shall be the basis of representation at the annual convention. He shall also furnish a complete list of all delinquents.

Section 9. It shall be the duty of the treasurer to render bills to regional or city associations for new members elected as soon as he is notified by the general manager of such election in accordanec with the by-laws.

Section 10. Duties of the executive committee. The executive committee shall receive for consideration and action at their meetings all reports, resolutions and communications presented by the officers, chairmen of committees and members, which in the judgment of the executive committee require immediate action, the benefits and effectiveness of which, if held over for the action of the convention, would be seriously impaired or entirely destroyed; except changes in the constitution and by-laws as provided for in the constitution and by-laws. The executive committee shall receive for consideration all reports, resolutions and communications before their presentation to meetings of the association, and shall, through the general manager, submit them to the association with their recommendations.

Section 11. The executive committee shall receive and take action upon the expenditures of any funds of the association.

Section 12. The executive committee shall have power to authorize the treasurer to open bank accounts; to buy, sell, convert or exchange securities and property of the association as provided by this constitution.

Section 13. The executive committee may appoint a general manager, a secretary of the association, and/or secretaries as provided for in this constitution.

Section 14. Bond: The association shall provide indemnity bonds for the president, vice-president, chairman of the executive committee, treasurer, general manager and such employees as the executive committee may direct. The executive committee shall designate the amount of the bonds. The bonding expense to be paid by the association.

Section 15. Duties of the General Manager: The general manager shall perform such duties as may be delegated to him by the president and/or by the executive committee in the interest of the association and the general interest of the industry.

Section 16. It shall be the duty of the general manager to provide minutes of all meetings of the association and the executive committee, to preserve all the

records belonging to the association and to perform such other duties incident to his office as may not otherwise be provided for. It shall be his duty to submit a quarterly report to the executive committee and at the first business session of the annual convention a report upon the work accomplished during the year.

Section 17. It shall be the duty of the general manager to approve or provide for the approval for payment of all proper expenditures of the association as provided for in the approved budget. He shall report to the chairman of the membership committee all applications for membership, and shall notify the treasurer and new members of their election to membership, and further, shall notify the treasurer of the names and addresses of all members elected in regional or city associations as soon as he receives such notice from regional or city association secretaries.

Section 18. It shall be the duty of the general manager to collect and account for all funds received and to deposit same in banks authorized by the executive committee.

Section 19. Duties of the Secretary of the Association: The secretary of the association shall be sworn to the faithful discharge of his duties. He shall be custodian of the seal of the association and may affix the same to any instrument requiring it and when so affixed it shall be attested to by his signature or by the signature of the treasurer.

That concludes the 19 sections in Article IV. I move their adoption as amended.

(The motion was seconded by Mr. Coon.)

Mr. Daum: I think it is under Section 9 (I didn't raise the question because I thought it would be provided for elsewhere) it says:—"It shall be the duty of the treasurer to render bills to regional or city associations for new members elected." Who is going to render bills for old members? Will that be the duty of the secretary or the treasurer or the general manager?

Mr. Cheesman: I think that ought to be inserted there, "for new and old members," or "for old and new members."

Chairman Matlack: How about "all members."

Mr. Coon: Just cut out the word "new."

Chairman Matlack: You have heard the reading of Article IV, the 19 sections. Are you ready to vote? All in favor please signify by saying "aye"; opposed "no." It is carried.

(Mr. Cheesman continued.)

Article V

Zone Classification

For the purpose of administration, the association is divided into five zones, comprised of the following States:

New England Zone: Massachusetts, Maine, Vermont, New Hampshire, Rhode Island, Connecticut.

Eastern Zone: New York, Pennsylvania, New Jersey, Maryland, Delaware, District of Columbia.

Southern Zone: Virginia, Mississippi, West Virginia, North Carolina, Texas, South Carolina, Georgia, Florida, Alabama, Louisiana, Kentucky, Tennessee.

Central Zone: Arkansas, Illinois, Indiana, Ohio, Iowa, Kansas, Missouri, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, Oklahoma, Wisconsin.

Western Zone: Arizona, California, Colorado, Idaho, Montana, Oregon, New Mexico, Utah, Wyoming and Washington.

I move the adoption of Article V as read.

(The motion was seconded by Mr. Coon, put to a vote and carried.)

(Mr. Cheesman continued.)

Article VI

Vacancies in Office

Section 1. President: In the event of the office of the president being declared vacant by action of the executive committee, the vice-president shall act as president until the next annual convention when a successor shall be elected.

Section 2. Vice-President and regional vice presidents: In the event of the office of the vice-president and/or any regional vice-president being declared vacant by action of the executive committee, the regional vice-president's successor shall be appointed from the same Zone and the vice-president from any zone within thirty (30) days by a majority vote of the executive committee.

Section 3. Executive Committee: All offices or memberships of the executive committee shall be filled by majority vote of the executive committee.

(I move the adoption of Article VI as read.)

(The motion was seconded.)

Chairman Matlack: It has been moved and seconded that we adopt Article VI as read. All in favor please signify the same by saying "aye"; contrary "no." Carried.

Gentlemen, I am going to suggest that unless you have some objection, or some questions to raise, we take a longer time between votes. I think we can gain time and save a lot of trouble, if you are willing. Unless I hear something to the contrary that is way we will proceed.

(Mr. Cheesman continue.)

Article VII

Meetings

Section 1. Date: The association shall hold annual conventions during the third week of October subject to change of date as provided for in Section 2 of this article.

Section 2. Time and place of annual convention: The time and place of the annual convention of this association shall be determined by the executive committee. This committee may change the date of the annual convention if in their judgment such change is of benefit to the association and provided that the annual convention be held within twenty (20) days of the date specified in Section 1 of this Article. Notice of time and place of annual convention shall be sent to the secretaries of all regional or city associations and trade papers at least two months prior to the date of the annual convention.

Section 3. Special Association Meetings: The president shall call special meetings upon written application of not less than thirty (30) Class A Members if and when approved by the executive committee.

Section 4. Executive Committee Meetings: The executive committee shall meet at the call of the chairman immediately following adjournment of the annual convention, and thereafter quarterly within twenty (20) days before or after January 1, April 1, July 1, October 1. The January meeting shall be the organization meeting. A report of the quarterly meeting may be made to the membership through the general manager's bulletin, or otherwise, as directed by the executive committee.

Section 5. Special Executive Committee Meetings: The chairman shall call special meetings of the executive committee when in his judgment it is necessary, or upon the written request of not less than nine members of the executive committee.

(I move the adoption of Article VII as read.)

(The motion was seconded.)

Chairman Matlack: You have heard the motion that Article VII be adopted as read. Are you ready for the question? All in favor please signify the same by saying "aye"; contrary "no." Carried.

(Mr. Cheesman continued.)

Article VIII

Amendments

This constitution may be amended or revised at any annual convention of the association by an affirmative vote of not less than three-fourths of the voting power present as provided in the by-laws. However, no such amendment or revision shall be considered unless the same has been first submitted to the committee on constitution and by-laws in writing, who shall present the same with their recommendation to the executive committee, and by them presented with their recommendation to the association at a regular session prior to the session at which final vote is taken.

I move the adoption of Article VIII.

Chairman Matlack: Can't we go on and read three or four?

Mr. Cheesman: That finishes the constitution.

Chairman Matlack: Article VIII finishes the Constitution. Is there a second?

(The motion was seconded.)

Chairman Matlack: All in favor please signify the same by saying "aye"; contrary, "no." So ordered.

(Mr. Cheesman continued.)

By-Laws

Article I

Applications for Membership

Section 1. All applications for Class A, Class B and Class D memberships shall be referred by the chairman of the membership committee, whose duty it shall be to submit them at once to the executive committee of the association for election. If the vote of the executive committee is favorable, the general manager shall notify the applicant. Upon payment of dues the applicant shall be enrolled by the general manager in the membership of the association. Class C members in regional or city associations shall be members in this national association.

Section 2. No individual, firm or corporation holding Class A membership shall be eligible to membership until they have signed the agreement relative to non-exchange of products and the anti-bribery agreement of this association.

Discussion

John Henry Coon: As I understand what Mr. Cheesman has just read about the membership, the local clubs are entirely eliminated from any question about membership. It says that the executive committee has the power to elect any member in Class A, B, or C. Where does the local club enter into the picture?

Chairman Matlack: I think it is "D" instead of "C."

Mr. Cheesman: No, "C."

Mr. Coon: As this was read, the local clubs have absolutely no option at all. If a firm or individual applies for membership in the Association, the executive committee elects him whether or not the local club approves it or otherwise. It is my understanding that was not the intention.

Mr. Cheesman: That is as it reads now. The only change in that is in Class C members, which we didn't have before.

Mr. Roh: I do not think that is the intent. There is only one way in which a manufacturer of paint, varnish, lacquer, water paint and kindred products can join the association and that is through the national organization. By doing so he automatically becomes a member and by paying dues he automatically becomes a member of the local or regional organization in the vicinity of his factory, and he pays no national dues to that local organization. He pays the club dues or the regional or city association dues.

What article is that?

Mr. Cheesman: That is Article I, Section 1 of the by-laws, on page 12.

Mr. Roh: Is it all applications for A, B, C and D?

Mr. Cheesman: No, applications for Class A, Class B and Class D.

Mr. Roh: Will you explain why that doesn't include Class C?

Mr. Cheesman: Class C membership is not included. The article refers first to "Class A, ClassB and Class D memberships shall be referred by the chairman of the membership committee, whose duty it shall be to submit them at once to the executive committee of the association for election. If the vote of the executive committee is favorable, the general manager shall notify the applicant. Upon payment of dues the applicant shall be enrolled by the general manager in the membership of the association. Class C members in regional or city associations shall be members in this National Association." They do not have to be voted on by the association.

(Mr. Cheesman continued.)

Article II

Association Annual Dues

Section 1. Class A Membership.

Dues Based on the Domestic Sales of Paints, Varnishes, Lacquers, Water Paints and Kindred Products.

Class.	Sales.	Amount.
1	Under $ 50,000	$ 25
2	$ 50,000 to 100,000	50
3	100,000 to 150,000	100
4	150,000 to 250,000	150
5	250,000 to 500,000	300
6	500,000 to 750,000	450
7	750,000 to 1,000,000	600
8	1,000,000 to 1,750,000	1,000
9	1,750,000 to 2,500,000	1,500
10	2,500,000 to 5,000,000	2,500
11	5,000,000 to 7,500,000	3,750
12	7,500,000 to 10,000,000	4,750
13	10,000,000 to 12,500,000	5,750
14	12,500,000 to 15,000,000	6,750
15	15,000,000 to 20,000,000	9,000
16	20,000,000 to 25,000,000	11,000
17	25,000,000 to 30,000,000	13,000
18	30,000,000 to 35,000,000	15,000
19	35,000,000 to 40,000,000	17,000
20	40,000,000 to 45,000,000	19,000
21	45,000,000 to 50,000,000	21,000
22	1/25 of 1% over 50,000,000	+21,000

Dues are payable quarterly on the first of January, April, July and October. New members shall pay from the date nearest the date of their acceptance into the membership of the association.

Discussion

The above table is as amended. Discussion by which it was amended was as follows):

Mr. Arnstein: In Class 5, $250,000 to $500,000 the dues are $300, and then it goes on to say "Class 6 under $500,000 to $1,000,000, $600." I believe that the majority of the paint manufacturers in this country come under that heading, and Class 6 membership is actually 100 per cent more than Class 5. Now the object of the association is to try to get in almost every paint manufacturer into the association. You will find that manufacturers that operate from $250,000 to $500,000 are just about on the breaking point, and every added expense is quite a hardship to them. I would suggest that Class 5 and Class 6 should be scaled down in accordance with 1, 2, 3 and 4, and a smaller differential should be made, from $150 to $300 and from $300 to $600. You impose a certain amount of hardship on that class of manufacturer which I believe is predominating in the United States. The jump from $150 to $300 I think should be modified a little and from $300 to $600 on Class 5 and Class 6 I think deserves consideration, Mr. Chairman.

Chairman Matlack: Mr. Treasurer, have you anything to say on that?

Mr. Roh: The only comment I have to make on that is that this scale is the scale that was worked out three years ago by the reorganization and refinance committee. I might say that on all those memberships under $500,000 sales, the scale is just the same or less than the present dues paid by the present membership, or the old membership of the American Paint and Varnish Association, except that there has been added the scientific circulars which were not distributed except to those who contributed to the educational bureau, and in addition to that, the membership in the local or regional clubs, which now cost you $20 apiece.

In other words, these dues have been figured out (I want to repeat this because the amalgamation committee made a strong point of it) so that all manufacturers of a million dollars or less will be paying toward the organization activities considerably less money than they now pay, and that affects 95 per cent of those members. I just want to say that in explanation.

Chairman Matlack: Does that in any way answer your question, Mr. Arnstein?

Mr. Arnstein: It answers my questions, but there are an awful lot of paint manufacturers who have sprung up in the last three or four years who are under that classification, and I think the organization would benefit if it were made possible for them to come into the organization. I think we would be very much better off to have them in than not in, and to jump from $150 to $300 may sometimes keep them out. I have no objection personally to it, but I am speaking for the benefit of the organization. You are facing new conditions in the United States as far as the paint industry is concerned. There are an awful lot of new paint manufacturers sprung up in the last few years and I think it should be made possible for them to join this organization.

Mr. Roh: I am wondering, Mr. Arnstein, if this wouldn't help. I can see that the jump from half a million to one million is a big jump, and I am wondering if we couldn't insert another classification between $500,000 and $1,000,000 that read something like this:

			Amount
Class 6	$500,000 to	$750,000	$450.00
Class 7	750,000 "	1,000,000	600.00

Mr. Arnstein: Anyway that you would modify it, Mr. Roh, to enable people to become members of the organization, would be satisfactory to me.

Elliott Phillips: Mr. Roh, am I to take that as a motion from you?

Mr. Roh: I make that motion, yes.

Mr. Phillips: I second the motion.

Mr. Roh: The motion, then, is to add another classification in the financial scale, that now reads:

			Amount
Class 5	$250,000 to	$500,000	$300.00

This added classification would be:

Class 6	$500,00 to	750,000	450.00
Class 7	750,000 "	1,000,000	600.00

Chairman Matlack: You have heard the motion and it is seconded. Are you ready for the question? All in favor please signify the same by saying "aye"; contrary "no." So ordered.

(Mr. Cheesman continued.)

Section 2. Class B Membership.

Dues based on the domestic sales to manufacturers of paints, varnishes, lacquers, water paints and kindred products.

Class.	Sales.	Amount.
1	Under $ 50,000	$ 20
2	$ 50,000 to 100,000	40
3	100,000 to 150,000	80
4	150,000 to 250,000	120
5	250,000 to 500,000	220
6	500,000 to 1,000,000	440
7	1,000,000 to 1,750,000	800
8	1,750,000 to 2,500,000	1,200
9	2,500,000 to 5,000,000	2,200
10	5,000,000 to 7,500,000	3,200
11	7,500,000 to 10,000,000	4,400
12	10,000,000 to 12,500,000	5,400
13	12,500,000 to 15,000,000	6,400
14	15,000,000 to 20,000,000	8,500
15	1/25 of 1% over 20,000,000	+ 8,500

Dues are payable quarterly on the first of January, April, July and October. New members shall pay from the date nearest the date of their acceptance into the membership of the association.

Section 3. Class C Membership Dues. On October 1 each regional or city association shall, through its secretary, furnish to the general manager a complete list of its Class C members and said association shall pay as annual dues the sum of $20 for each eligible member so reported, and $1.70 per month for each new Class C member elected after October 1 until the following October 1. Regional or city associations located outside the United States shall pay as annual dues the sum of $10 for each Class C member in United States funds or its equivalent.

Section 4. Class D Membership Dues. Individuals, firms, corporations, manufacturers of paints, varnishes and lacquers in Canada, with a sales volume of $50,000 or more, shall pay annual dues of $50. Those with sales volume of less than $50,000 shall pay annual dues of $25. All other classes of Canadian members may affiliate by becoming Class C members by paying $10 in addition to the dues of the regional or city associations of Canada. If admissions are made during the fiscal year the dues will be pro-rated.

Section 5. Scientific Section Circulars: Scientific organizations at home and abroad, foreign manufacturers of paints, varnishes, lacquers, water paints and kindred products, may receive the scientific section circulars on payment of $100 per annum.

Section 6. Honorary Members: Honorary members shall be exempt from the payment of dues.

Section 7. Expulsion: The executive committee, at its discretion, may declare forfeited any membership for good and sufficient reasons, or for non-payment of dues that may be in arrears six (6) months.

Section 8. Annual Dues: The fiscal year shall commence October 1 and end September 30, but dues of Class A members and Class B members shall be based on sales reported to the association headquarters as soon as figures are available after January 1. All other membership dues shall be paid in advance to the national treasurer within sixty days after October 1.

I move the acceptance of the eight paragraphs in Article II as amended.

Chairman Matlack: Do I hear a second?

(The motion was regularly seconded.)

Chairman Matlack: It has been moved and seconded that the eight paragraphs in Article II be accepted. All in favor please signify the same by saying "aye"; opposed "no." It is so carried.

(Mr. Cheesman continued.)

Article III

Meetings

Section 1. Quorum: Fifty *Class A members* and delegates shall constitute a quorum at any meeting of the association. Twelve members shall constitute a quorum of *any meeting* of the executive committee.

Section 2. Representation at meetings: Class A members shall have full privilege of the floor and one vote at all meetings of the association.

Section 3. Delegates: Each regional or city association in good standing shall elect delegates to meetings of this association, as follows:

One delegate for 10 members or less.

Two delegates for more than 10 and not more than 20 members.

One delegate for each additional 10 members over 20 members.

I move the adoption of Article III, Mr. President.

(The motion was regularly seconded.)

J. H. Coon: As I understand, Mr. Cheesman, it provides for two delegates for more than 10 and not more than 20 members, but one delegate for each additional 10 members over 20 members. Isn't it the intention that there be one delegate for 10 members or less over the 20? I think that is the way it was in the old Constitution.

Mr. Shannon: It is that way in the old Constitution.

Mr. Coon: It has not been lived up to that way.

Mr. Cheesman: The headquarters have interpreted it that way when they have told you how many members you are entitled to.

Chairman Matlack: All in favor please signify the same by saying "aye"; opposed "no." It is so carried.

(Mr. Cheesman continued.)

Section 4. Alternates: Each regional or city association shall elect an alternate for any delegate, who shall act for such delegate during his absence, and whose

vote shall be binding the same as if cast by such delegate.

Section 5. Voting power: At all meetings of the association a motion or resolution, except amendments to the constitution and by-laws, may be voted upon by Class A members and delegates of the association present. Each delegate shall be entitled to one vote.

Section 6. A qualified member or delegate may demand a vote by roll call or Class A members and delegates. Said vote may be taken at once or during the next regular business session. The result of Class A members and delegates' vote shall supersede the result of a vote on the same question by the membership at large.

Section 7. Delinquents: No member or delegate or alternate representing a regional or city association who may be delinquent in payment of dues shall be allowed voting privilege.

Section 8. Floor privilege: Honorary members shall be entitled to the privilege of the floor without voting power. The privilege of the floor at any meeting may be extended to delegates or representatives from other organizations or to other individuals upon favorable vote by two-thirds of the voting members present.

Article IV

Voting by Mail

Section 1. Executive Committee: When necessary, the executive committee shall vote by mail on questions presented by the president or chairman and a majority of the votes received within fifteen (15) days shall be decisive.

Section 2. Members: Questions which in the judgment of the executive committee are of sufficient importance for the consideration of the association, and not important enough for a special meeting, may be voted upon by mail, and a majority of the votes received within thirty (30) days from the voting membership of the association shall be decisive.

I move the adoption of Article IV as read.

Mr. Trigg: I second the motion.

Chairman Matlack: It has been moved and seconded that Article IV be adopted. All in favor signify by saying "aye"; opposed "no." It is so adopted.

(Mr. Cheesman continued.)

Article V

Committees

Trade Sales—

Section 1. There shall be a national trade sales committee, the chairman of which will be appointed annually by the president.

Section 2. The president and the president of each regional or city association shall appoint to this committee a regional or city member having a thorough knowledge of trade sales in his district.

Section 3. It shall be the duty of the chairman of each regional or city trade sales committee to thoroughly organize those interested in trade sales in his district. It shall also be his duty to organize those members of lacquer sales to auto accessory wholesalers. The reactions of these regional or city organizations shall be presented by *their* chairmen to the national trade sales committee meetings.

Industrial Sales—

Section 4. There shall be a national industrial sales committee, the chairman of which will be appointed annually by the president.

Section 5. The president shall appoint as a member of this committee a member of a regional or city association thoroughly acquainted with industrial sales in that district. It shall be the responsibility of this committee member or local chairman to organize members of industrial sales locally; members interested in industrial sales of paints; members interested in industrial sales of lacquers, etc. The reactions of these regional or city associations shall be presented by *their* chairmen to the national industrial sales committee meetings.

National Advisory Committee—

Section 7. Budget and Finance Com- of the officers of the national association, the regional vice-president and chairman of the club program committee, and presidents of the regional or city associations, and shall meet annually prior to the national convention at the call of the president. The president of the national association shall preside at such meetings.

Section 7. Budget and Finnace Committee. This committee, consisting of three or more members shall be appointed by the chairman of the executive committee and shall be approved by the executive committee.

Section 8. Unfair Competition Committee. This committee shall be appointed by the president in collaboration with the chairman of the executive committee and be approved by the executive committee.

Section 9.

Clean up and paint up committee.
Save the surface committee.
Scientific section committee.
Traffic committee.
Legislative committee.
Distributors committee.
Kindred products committee.
Simplifications committee.
Constitution and by-laws committee.
Membership committee.
Credits and collections committee.
Memorial committee.
Production clubs committee.
Trade mark committee.

The aboce committees shall each consist of three or more members appointed by the president and each may be organized in the same manner as the trade and industrial sales committees, if desirable.

Section 10. The budget and finance committee shall fix the compensation of the president and have charge of the allocation of all income of the association, including the allotment of such funds as may be required for the work of the paint industry recovery board, subject in turn to the approval of the executive committee of this association.

Arrangements and Entertainment Committee

Section 11. The president shall appoint an arrangements and entertainment committee of three or more members, who shall arrange for the ensuing annual convention. They shall receive the assessments for the same as provided in the by-laws, and shall make all the necessary disbursements from said fund, rendering report to the executive committee within thirty (30) days after the close of the annual convention. The president shall also appoint a ladies' reception committee of three or more ladies.

Chamber of Commerce of the United States of America

Section 12. The president shall appoint annually a chamber of commerce of the United States of American committee, composed of a chairman, who shall be the national councillor, as provided for in the by-laws of the chamber, and the number of delegates to which our membership may entitle us, and as provided for in the by-laws of the chamber. The national councillor and the delegates are empowered to represent this association in accordance with the by-laws of the chamber, and to cast their votes for this association upon any subjects presented to them. The national councillor shall present to the chamber, upon approval of the executive committee, such subjects as the association may submit, and no proposition, resolution or question shall be presented by the national councillor to the chamber without the approval of the executive committee.

Regional or City Association Program Committee

Section 13. To consist of not less than five members. The duty of this committee will be to prepare at the beginning of the fiscal year, a series of programs, which shall be sent to each regional or city association for use by the regional or city association during the year.

Nominating Committee

Section 14. At least three months preceding the annual convention, the president shall appoint, subject to the approval of the executive committee, a nominating committee of seven members, as follows:—

Four to be selected from Class A membership, two to be selected from Class B or C membership (none of whom shall be officers) and the president. The names of the nominating committee shall be read at the first business session of the annual convention and the committee shall at the third business session reporting a ticket to be placed in nomination in accordance with by-laws.

Publicity and Press

Section 15. The president may appoint annually a publicity and press committee consisting of five members, whose duties it shall be to furnish the press with such information as in their judgment the public might find interesting and which shall not in any way jeopardize the interests of the association or any of its members. This committee together with the general manager shall edit all reports of the annual conventions or other meetings of the association. There shall be made a stenographic report of the business proceedings of the annual convention; upon application such report shall be furnished as edited and approved by the publicity and press committee to any of the trade papers subscribing. The expense of the stenographic report shall be divided pro rata between the association and each of the trade papers making application for the report.

Arbitration

Section 16. To be composed of six members of the association, four of whom shall be Class A members, and two of whom shall be Class B or C members.

Rules of Procedure for Arbitration

1. At the time of asking for an arbitration, the parties shall forward to the chairman of the committee on arbitration their written agreement to abide by the decision of the arbitration committee. They shall deposit with the treasurer of the National Paint, Varnish and Lacquer Association a sum of money designed to defray the expenses of the committee on arbitration, including traveling expenses to the place where hearing is to be held and all expenses incident to the hearing. The amount of this deposit in excess of such expenses will be returned pro rata. If first deposit is insufficient, the parties to the controversy shall pay the additional amount, same to be divided equally between them.

2. When the parties to the controversy have complied with Rule 1, the chairman of the committee on arbitration shall confer with his associates and fixe a time and place where the arbitration is to be held and notify both parties.

3. Unless otherwise agreed between the parties of the controversy, each party shall submit to the arbitration committee his side of the case in form of a typewritten statement, which shall present his position and contain his arguments in support of same and cite any precedents bearing on the case. This shall be accompanied by original papers or exhibits referred to in the statement.

4. No person shall sit as a member of the committee on arbitration at a hearing who is interested in any manner in the subject matter of the dispute or who has previously expressed an opinion on the merits of the particular controversy or who would be subject to any common law disqualification of a judge to hear and determine such controversy.

5. A majority of the committee on arbitration shall be necessary to constitute a quorum empowered to hear and determine the matter in dispute and such majority may, if it desires, select substitutes for other members of the committee who are unable to attend. Such substitutes shall be members of the association and qualify under Rule 4 and shall serve only in connection with the controversy for which they have been selected.

6. The record of the action of the committee shall be made in triplicate, one copy of which shall be given to each of the contending parties, and one copy sent to the general manager of the National Paint, Varnish and Lacquer Association, Inc., but no report of the same shall be published or made a matter of permanent record.

All members are cordially invited, in cases of dispute, to avail themselves of this service and thus avoid the expense, delay and ill-feeling of litigation.

Resolutions Committee

Section 17. The president shall appoint from the membership of the executive committee at its annual meeting a committee of three (3) to be known as the resolutions committee. In accordance with the by-laws, this committee shall consider all reports, resolutions or recommendations presented in sessions of the annual convention pertaining to matters that have not been before the executive committee. They shall submit to the convention such resolutions and reports with their recommendations. When necessary, they shall draft and submit to the convention resolutions on subjects requiring action.

Trade Mark Committee

Section 18. This committee shall direct the work of the trade mark bureau, as provided in the by-laws.

Special and Subcommittees

Section 19. The president shall appoint upon the request of the executive committee and when the exigency may arise, or when in his judgment it may be required, additional special or subcommittees, to whom the president shall refer or delegate to investigate, support or confer on subjects not within the scope of the duties assigned to other committees, as provided for in this article.

Duties of Committees

Section 20. It shall be the duty of all committees, unless otherwise specified, to receive for consideration, all subjects involving the interests represented by said committees; to formulate such recommendations as may seem to serve the best interests of the association, for presentation in such form and manner as are prescribed for committee reports in the by-laws.

Communications

Section 21. All communications relating to or affecting any interests covered by committees, shall be referred by the general manager, upon the approval of the president, to the chairman of such committee, who shall make reply or return to the general manager such recommendations as his committee may indicate.

That completes Article V. I move its adoption, Mr. President.

(The motion was regularly seconded and carried and the article adopted.)

(Mr. Chessman continued.)

Article VI

Reports, Resolutions, Communications and Amendments

Section 1. Reports: All committees shall submit through their chairman to the general manager at least thirty (30) days before the annual convention, for presentation through the executive committee to the convention, a written report, accompanied by recommendations, if any, on the subjects assigned said committee.

Section 2. Resolutions: All resolutions, special reports or communications shall be submitted to the general manager before the annual convention for the consideration of the executive committee, before presentation to the convention. Any resolution, report of recommendation presented in convention sessions pertaining to matters which have not been before the executive committee, before action, shall be referred to the resolutions committee for consideration and recommendation. Such resolutions, reports or communications must be submitted prior to the final business session of the convention.

Section 3. Amendments: The association shall by majority vote adopt, reject, or amend any resolutions, reports or recommendations made through or by the executive committee, or substitute therefor for any resolutions or recommendations upon the same subject matter.

Article VII

Bureau of Trade Marks

Section 1. A trade mark bureau shall be maintained in the office of the general manager.

Section 2. The trade mark bureau is for the purpose of keeping records and giving information as to marks in our industry, also giving information on trade mark matters in general. The bureau shall be regulated and supervised by the trade mark committee with the coouperation of the general manager.

Section 3. The trade mark committee shall, subject to the approval of the executive committee, make such rules and regulations as may seem desirable, with regard to the registration of trade marks in the trade mark bureau, the furnishing of reports and publication to members and non-members relating to trade marks and the fees to be collected therefor. The chairman shall make a report at the annual convention of the association.

Article VIII

Expenses of Officers

As may be authorized by the budget and finance committee and approved by the executive committee, the necessary expenses of the president, general manager or duly accredited agent or representative, shall be paid.

Article IX

Annual Convention Registration

The assessment at the annual convention shall not exceed twenty dollars ($20) for each person attending the convention; the amount to be determined by the executive committee prior to opening of the convention.

Article X

Press Representation

At the annual convention representatives of the local daily press and others may be admitted to the preliminary opening session when civic representatives address the convention and reports of the officers are read. All subsequent sessions shall be executive in their character and none but members, applicants for membership, or delegates of affiliated organizations, or delegates from other accredited organizations shall be admitted except by a two-thirds vote, and the president shall appoint a daily sergeant-at-arms, whose duty it shall be to exclude all visitors except as herein provided for.

Article XI

Nominations

Section 1. Nominating Committee Report: The report of the nominating committee shall be presented at the third business session of the annual convention and shall be voted upon at the last business session of the convention.

Section 2. Six weeks prior to the annual convention, the nominating committee shall mail to all members, entitled to vote, the names of six candidates to be elected to the executive committee, showing the names of their companies. If twenty-five members, entitled to vote, wish to place other candidates in nomination, they may do so by filing the names of said candidates with the nominating committee three weeks prior to the convention. Provided only one name be filed from any one regional or city association.

Section 3. Other Nominations: Other qualifying nominations may be made from the floor, by anyone having voting privileges, at the first business session succeeding that at which the nominating committee makes its report, and shall be voted upon at the last session of the convention.

Article XII

Rules

Section 1. Parliamentary: The proceedings of all meetings of this association and its executive committee shall be subject to parliamentary rules as indicated in Robert's Rules of Order.

Section 2. Appointments: All committee appointments not provided for shall be made by the president.

Section 3. Order of business.

1. Preliminary opening of convention.
2. Address of civic authorities.
3. Reply of association.
4. Roll call.
5. President's address.
6. General manager's report.
7. Treasurer's report.
8. Auditor's report.
9. Committee reports.
10. Resolutions.
11. Unfinished business.
12. New business.
13. Election of officers and members of the executive committee.
14. Installation of officers and members of the executive committee.

I move the adoption of that, Mr. President.

Mr. Trigg: I second the motion.

Chairman Matlack: You have heard the motion to adopt VI, VII, VIII, IX, X, XI and XII as read. All in favor please signify the same by saying "aye"; contrary "no". It is carried.

(Mr. Cheesman continued.)

Article XIII

Code of Ethics

We, members of the National Paint, Varnish and Lacquer Association, Inc., recognizing our responsibilities and obligations to promote the public welfare, and to maintain honorable, fair and friendly relations among men, do pledge ourselves:—

1. To compete always with fairness and honesty, seeking patronage on merit and service; to refrain from false derogatory reference written, oral or printed, to competitors or their products; and from the circulation of harmful rumors regarding such competitors' products, or their personal or financial reputation; to strive, by sincere and intelligent co-operation with our competitors, in all lawful ways to increase the efficiency and service to the public of the industry as a whole; to base our advertising exclusively on the merit of our own products and value of our own service, without false, derogatory reference to the products of competitors or misleading comparisons therewith.

2. To be guided by a spirit of justice, honor and fairness, in all our relations with members of the allied trades, realizing that the standard of ethics maintained in our industry must vitally affect the standard observed in associated industries; to encourage the adoption by the allied trades of similar codes as guides to govern their practices; and to discourage unfair trade practices in those trades, even though such practices might at times be to our own immediate advantage.

3. To represent our products truthfully in advertising, labeling and branding; avoiding therein all false or misleading statements or descriptions.

4. To avoid and actively strive to prevent all forms of commercial bribery or corruption by members of this association and by the industry in general; and to the end we pledge our support to the Federal Trade Commission in locating and prosecuting individuals guilty of such practices.

5. To recognize the right of employees to use all honorable and reasonable effort to better their condition, but to refrain from directly or indirectly soliciting or bidding for the services of the employee of another member.

6. To recognize that only when an employee shall take the initiative shall we have the right to negotiate with such an employee of another member.

7. To refrain from the unethical practice of taking in exchange the paints, varnishes or other kindred products of another manufacturer, distributor or dealer.

"Put yourself in OUR place"

"You want us to buy your paint. Well, here's a friendly tip. The best way to get us to do it is to give us what we want.

"What we're talking about is the package. Why not let your package show the same good judgment as the paint you put inside?

"Maybe you don't realize how much we value the package—how we respond to beauty, welcome the thoughtful little conveniences that make life easier and pleasanter to live. But any manufacturer who wants our trade must understand these tastes — and pamper us. We're spoiled. We've learned what can be done. Why should we take anything else?"

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8. To adhere faithfully to the rules of conduct herein set forth and to inspire our fellow members to do likewise, believing that the Golden Rule is the only safe guide of conduct in the relations among men.

9. Any violation of this code shall be referred by the president of the National Paint, Varnish and Lacquer Association, Inc., to the executive committee for consideration.

Article XIV

Amendments

Section 1. These by-laws may be amended or revised at any annual convention of the association by an affirmative vote of not less than two-thirds of the voting power present as provided for in the by-laws. However, no such amendment or revision shall be considered unless the same has been first submitted to the committee on constitution and by-laws in writing, who shall present it with their recommendation to the executive committee, and by them presented with their recommendation to the association at a regular session prior to the session at which final vote is taken.

Section 2. Any portion of the by-laws may be suspended for a definite purpose by unanimous vote at any meeting of the association."

I move the adoption of that article.

Mr. Trigg: I second the motion.

Chairman Matlack: It has been moved and seconded that Article XIV be adopted. All in favor say "aye"; opposed "no." It is adopted.

I think it is customary to take a general vote on the entire constitution and by-laws as amended.

Mr. Cheesman: I so move.

Mr. Trigg: I second the motion.

Chairman Matlack: It has been moved and seconded that we vote on the entire constitution and by-laws as amended. All in favor please signify the same by saying "aye"; contrary "no." It is carried.

Mr. Shannon will have a few remarks to make.

Mr. Shannon: The industrial sales meeting tomorrow has an especially attractive program arranged, and in order to provide frank discussion on all subjects, it has been decided to have a closed session—that is, only manufacturers of industrial finishes will be present.

Chairman Matlack: We will reconvene promptly at two o'clock when Mr. Trigg will have charge and we will take up the code.

A motion to adjourn is in order.

(Upon motion regularly made and seconded, the meeting adjourned at twelve thirty-five o'clock.)

Second General Industry Meeting, Tuesday Afternoon

The general industry meeting for discussion of the code of fair competition of the paint, varnish and lacquer manufacturing industry was called to order at two-twenty o'clock on Tuesday afternoon by Ernest T. Trigg, chairman of that code committee.

Code of Fair Competition

Mr. Kurfees: Gentlemen, we have a very important subject for discussion this afternoon, the code of fair competition of the paint, varnish and lacquer manufacturing industry. Ernest T. Trigg, chairman of that code committee will present that subject for our earnest consideration.

Mr. Trigg's Address

Chairman Trigg: Gentlemen, before I go into the details of the code with you, perhaps it might be interesting to sketch briefly for you the development of the code and how it came into being.

The educational bureau, as you know, on the fifth of June this year authorized the appointment of a code committee charged with the responsibility of preparing, presenting and completing a code of fair competition for our industry. Incidentally, that was eleven days before the national industrial recovery act was signed by the President of the United States, which was on June 16, but it was so evident on the fifth of June, or in fact before that, what was going to happen that the educational bureau came together in a special meeting for the purpose of considering this subject and determining what to do about it. The appointment of the code committee was the result.

The code committee started its work that night, the fifth of June, and it has been at the job almost continuously ever since. But I suppose that as you men look over the copies of the code which has been given to you, or have already looked over copies, some one of the editions that has been sent out, you may wonder why with so comparatively few and what may seem so simple paragraphs, it has taken so long to get the code together.

List of 3000 Manufacturers

We started out with a list of something over 1050 manufacturers in the industry, in the United States, that list being obtained from the census bureau of the Department of Commerce in Washington. We have been adding to that list constantly and are still adding names to it as new names come to us that are not on the list of the department; so that we have for some time had a list totaling over 3000 manufacturers in the United States, and your code committee has had the job of writing a code which met the ideas of those 3000-odd manufacturers as well as possible.

There naturally were many different manufacturers located all the way across the country, from the Atlantic Coast to the Pacific Coast, varying sizes of companies from the very smallest, doing a little local business in one city, all the way up to our large national distributors and manufacturers who are selling in every state in the Union, and with the widest possible range of manufacturing interest on the part of those companies, some of them manufacturing practically only one class of goods and another manufacturing another class of goods, and so on, it meant there were all shades of opinions, all shades of ambitions, and ideas as to what ought to go into our code.

It has been the policy of your committee from the beginning to give genuine, sincere and sympathetic consideration to every proposition which was put up to it, particularly every objection which was made to any provision in the code, and to every suggestion which was made for an exception of some kind or other because of unusual or peculiar conditions. The committee, or at least some of its members, have done a great deal of traveling, have gone to different cities where they have held group meetings, talked the propositions out which were bothering the local manufacturers, and in every way that the committee could it has worked to the end of presenting as simple a code as possible, but yet one which was satisfactory to the industry in the main, and one which would stand the test at Washington, and which, above everything else, would render a real service of benefit to this industry and through the industry to the public.

We lost track, or at least the chairman has lost track of the number of editions to the code which have been printed. We got to a place a long time ago where we arranged with the printer to keep the forms standing, so that on almost a minute's notice he could print a new edition, leaving out a paragraph, or making a change in one, or adding something, because we have gone through a process of almost continuous adjustment, not changing so much in the sense of anything vital, except one or two things which I will tell you about, but changing the language, changing the way subjects had been approached, so that the various boards and groups and administrators, et cetera, in Washington might be satisfied with it.

After getting down to a place where we thought that the code was pretty nearly a finished product, where at least it was ready to be formally presented to the deputy administrator, General Williams, who is in charge of our code, we took the precaution of sending out the then latest edition of it to all the manufacturers on our list, giving them an opportunity to consider everything which was in the code, and then arranged for the usual public hearing, which has to be arranged for in a very accurate and legal form. There must be certain representations made; there must be communications passed back and forth that establish the public hearing. The public hearing was held on the twenty-sixth of September, and it was very well attended by members of the industry.

Protests From Only Seven

I think it is a compliment to the vision of the members of the industry, a compliment to their knowledge of what is back of all of this NRA business, to know that out of over 3,000 manufacturers who had copies of the code, who knew there was to be a public hearing, who were invited to attend that public hearing if they objected to any provision in the code and state their objections at that time—out of over 3,000 manufacturers when we came to the public hearing on the twenty-sixth of September there were only seven manufacturers who appeared to make a protest against any one provision of the code. So your committee felt gratified that situation existed.

Following the public hearing, the very next day, the committee got down to business with the administrator and with the members of the organization who sit alongside of the administrator, and if he doesn't think of something one of them is pretty sure of doing it. The deputy administrator is flanked on either side by representatives of the labor group, of the so-called consumers advisory board, of the industrial advisory board, of representatives of the statistical and planning division, of the Legal Division, and perhaps some others who might come in for a few minutes and dispose of some subject rather quickly and pass along again.

We were very fortunate in that the administrator, or rather the industrial advisory board, Mr. Stettinius, following the usual custom in matters of this kind, appointed an independent industrial advisor to sit with them on our code. It is the practice to have some man from the industry sit in each code, who thoroughly understands the industry, but who does not have too much direct or personal interest in it, or at least has had no interest in the preparation of the code itself, to get such a man to sit with them to advise the deputy administrator and his associates on various matters that come up in connection with the code. So we were very fortunate in having appointed by the industrial board, E. V. Peters, to represent the industry with the administrator. He was not our man. He was their man. He was the man to whom the deputy administrator and the members of the various boards would confer if there was some question not quite clear in their minds, or if they were quite fully prepared to accept what the members of the committee said to them, they would confer with Mr. Peters to get his opinion and advice. Mr. Peters sat through our public hearing; in fact he sat in some preliminary meetings before the public hearing. Then he sat through the public hearing, and he sat with us through our subsequent conferences and rendered a very distinct and signal service to the administrator and his associates, in helping them to understand the industry and satisfying them that certain provisions or certain statements or certain additions were as represented.

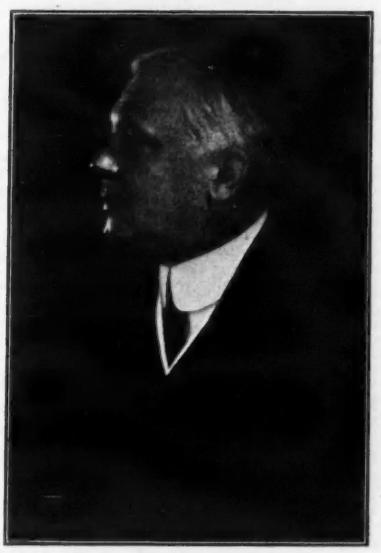
Tribute to Mr. Peters

I think, Mr. President, if I may, that this might be a very good time, a proper time, for the industry to express to Mr. Peters their appreciation of the services which he rendered in this manner in connection with this very vital document of this industry, and if it is within my province, I should like to move that we extend to Mr. Peters our very sincere thanks and appreciation of the work which he did in this matter, and with assurances of our very high regard and best wishes for him in every way. I make that mtoion, Mr. President.

(The motion was regularly seconded and the audience arose and applauded.)

Chairman Trigg: Gentlemen, the code, so far as we know, is not yet signed. I hoped to be able to say to you at this time that the President's signature had been affixed. It went last Friday from General Williams to General Johnson, with General Williams' approval and endorsement. General Johnson had it on Saturday and we hoped to get word that General Johnson had passed it along to the President on Saturday. We didn't get that word on Saturday. The office in Washington promised to telegraph immediately if that was done, but we got no wire from them. However, yesterday we learned that General Johnson had approved the code and had passed it along to the White House, where it is now. The delay in the President's signing the code, so far as we know, is not in any particular due to his objecting to anything in it (I say so far as we know), but is due rather to the fact that he hasn't been able to get to it. He is pretty busy, of course.

We talked to General Williams at one o'clock this afternoon, or two o'clock their time, and he said that up to then the code had not been signed, but that it was right before the President and



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Chairman, General Code Committee

that he himself had communicated twice with the White House this morning to see if he couldn't get it signed so that he could send word to us today that it was approved and definitely settled. General Williams thought it possibly would be signed this afternoon, and if it is we will get word immediately either over the long distance telephone or by wire.

So in presenting the code to you today, it seems desirable for us to go through it, but you must understand that it is not yet approved by the President of the United States, and you must understand, therefore, that while it has passed all along the line and gotten the okey of everybody now except the President himself, there is always a chance that at the last minute the President may see something in it that he objects to and he may order that out and send the code back to be revised again. So please understand, then, if you will, that we can't go away from this meeting unless we do get word that it is signed before going away, with the understanding that any part of this is as yet approved by the President and hence in effect so far as our industry is concerned.

Mandatory Features

You all know there are certain mandatory features of the national industrial recovery act. For instance, that act requires that in every code there must be a provision for maximum working hours, for minimum wages, for collective bargaining, and then a clause known as the presidential authority clause, which gives the President the right in the code to make whatever later changes he might see fit. Of course, the real purpose of the codes from the administration standpoint is to bring about a condition which will mean the employment of more men and the increasing of wages to those men who now have jobs and to the new men who will be put back to work so that the aggregate spending power of the great mass of workers will be substantially increased.

Those provisions have to go in the code. There is no code without they are there.

The question of what should be the maximum hours of work and the minimum wages in an industry is not arrived at in a haphazard manner. It has to be arrived at by most exhaustive study of the existing conditions and of the conditions in previous years of better business activity, and on an average basis, and in every conceivable way the administration itself, as well as the code committee, digs into the question of what hourly basis shall the industry adopt in order that the reduction in hours will be sufficient to insure the employment of a substantial number of additional men. One of the things which we were confronted with constantly in our discussions on maximum hours was this question: If we permit you to establish a basic 40-hour week, how many men will that put back to work, and will that number of men that you put back to work come somewhere closer to the peak of employment in your industry? Will it mean that your industry will then be forced to employ additional help so that the aggregate number of men employed in the paint industry would equal 1929, or if not 1929, would it equal an average of 1925 to 1928, or some other average period? In other words, they had to be shown, and we had to produce statistics. They were not at all interested in any conjectures we might make. They didn't care a rap for the ideas that we expressed as to what we believed would occur, but they wanted to have the actual facts and why. And we were able to present figures that would pretty well satisfy them and satisfy ourselves that the hourly provisions now in our code would make a very satisfactory showing for the paint industry in so far as the employment of additional help goes.

Of course, we were obliged in what we said on that subject, to consequently keep before the administration the fact that unless there was improvement in the volume of business and if the volume of business continued to shrink further, we couldn't be responsible for assuring them about the additional employment, but based on current normal conditions, we satisfied them and satisfied ourselves.

The same general line of procedure had to be gone through with in so far as the minimum wages were concerned.

Changes in the Code

I am not going to take your time to read all of the code unless, Mr. President, there is a request for it, because I am assuming that probably everybody is pretty familiar with it by this time. But I would like to go through the code by mentioning the names of the paragraphs and then calling your attention to any change which has been made in any paragraph during the last month or so.

Mr. Kurfees: Gentlemen, will that be satisfactory to you, to omit reading the entire code as we take for granted most of you are familiar with it, but as Mr. Trigg suggests, taking up certain paragraphs which he would like to talk to us about? Is that satisfactory?

Chairman Trigg: I would like to suggest, further, that as we go over each paragraph, if there are any questions which occur to anyone, if he will ask them I will do my best to answer them.

Paragraph by Paragraph

Article I is on the subject of the Purpose, which pretty well speaks for itself.

Article II on Definitions has not had much change made in it. It originally contained in the definition of the industry, in the first of that article, the wax and polish business, but we have eliminated that from the code because we had difficulty in finding out from the wax and polish people what they really wanted to do. We found that there were at least three other associations that insisted that wax and polish belonged in their code and not in ours. We had no desire to force any branch of the industry to come under our code if there was sufficient reason to feel that it might properly go somewhere else and they wanted to do it, but we were perfectly willing to have them come under our code and really believe they should do so.

Finally, about a week before our last filing of the code, we talked over the long distance telephone with two of the principal manufacturers who specialize in that business in different cities, and made it very clear to them that if they wanted to come along with us, we would be glad to have them, but we had to have something definite, if possible, because we couldn't wait any longer, and wouldn't they please let us know within a week, and if they did say they wanted to come in under our code, wouldn't they please send us information indicating that the group who acted upon it represented at least 75 per cent of the number of manufacturers specializing in that field and at least 75 per cent of the tonnage representing the volume of business done.

We didn't hear anything by the end of that week and it was holding up the code and its progress, so we said to General Williams, "Please take wax and polish out at this time and we will send word to the wax and polish people as to what has been done and why we had to take it out, but that the code will be open any time in the future, after it is approved by the President, for them to come in." That can be done at any time, you understand. There can be supplemental codes filed, which of course have to go through the usual procedure in Washington, be okayed there, but they can be filed.

Export Trade Defined

You will notice that in the first paragraph under Article II, the last sentence, that has been added since some of the codes were printed. "The term 'export trade' means any business transaction with any purchaser for shipment of products of the industry outside of the continental United States." We had to put a definition of export trade in the code, making it clear as to just what it would cover, because in subsequent paragraphs we excluded export trade from the code.

Article III, Industry Law and Effective Date, has been added to in the last part, as follows; beginning in the fourth line, near the end, we have added these words, "except that all articles of this code, which are included in Part 2 hereof, shall not apply to export trade." That is a sort of basket or catch-all clause. You will find later on in some of the fair practice provisions that we except export trade, but it occurred to us that perhaps it might be overlooked somewhere and it would be better to have a general overall clause that exempted export trade, so we put it in here and in order to handle the job right so far as this feature of it is concerned, we rearranged the code and put in Part 1, the part we are discussing now, with the mandatory features under the act and certain other matters, such as monopolies, state laws, reports and administration; then we set up a Part 2, which deals only with the fair practice

provisions, and you will see that when we come to it.

Collective Bargaining

Now, Article IV, Collective Bargaining, is another mandatory provision which has to be in a code, just as it is in the act. You will recall that we originally included in our code—in fact, it is now in the copy you have before you—the so-called merit clause which was developed by the automobile manufacturing industry and was in their code. Of course, there has been much controversy over that so-called merit clause, with the result that General Johnson and the President both said it would not be permitted in any code after it went into the automobile code. And we have been told every time the question has come up, including at the public hearing when we read this merit clause, that it would have to come out.

At the public hearing General Williams stood up and said:—"Gentlemen, I have no choice in the matter. It is not optional with me. I am under positive instructions from the President of the United States and General Johnson not to permit that clause to go into any code, so it will have to come out."

We said, "Well that may be, General, but we don't want to take it out."

However, when we got down to the final consideration last week, and he was ready to pass it up to General Johnson, and from there on to the President, there was nothing left to do but for him to tell us in a letter that the clause would have to come out. And so, when he put it to us that way we considered that he was taking it out. In your copy, therefore, that paragraph should be scratched out. If anyone happens to have a copy where the second paragraph of Article IV, Collective Bargaining, is not scratched out, it should be, because it is not in the code.

By the way, on that merit clause, let me say this:—All that merit clause says is this:—It says that the employer shall continue to have the right to select, retain and advance employees, based upon their own individual merit, without regard to their membership or non-membership in any organization. That is all it says. It isn't permitted in the code.

However, the President has fairly recently addressed a communication to General Johnson, which has been made public, and a copy of which we have, in which the President states to General Johnson his interpretation of the situation, and sets forth the fact that it is his understanding that under the national industrial recovery act, and this collective bargaining paragraph, that the employer does continue to have the right to do these things. So that while it isn't to be permitted in the code, and hence cannot become the law of the land after being approved, probably the next best thing to that is to have a statement published broadcast all over the country from the President of the United States saying that that is what he understands it means.

It is our purpose, when we print the code, after final approval, and distribute it to you and other manufacturers for your use and record, to reprint the President's letter on this subject in the back part of the code.

Wages and Hours

Article V—Minimum Wages and Maximum Hours. In paragraph (a) covering office and delivery employees, there is a change as against the original code. You will probably recall that the original code provided that office and delivery employees might work a total of 1,088 hours in any 26-week period; 1,088 is the sum total of 20 weeks at 40 hours, and six weeks at 48 hours. We put it in at 1,088 hours over the whole period in order to make it just as elastic as possible, so that the employer might be able to adjust his delivery people, or adjust his office people in whatever way he saw fit. We were not permitted to let it remain in the code that way. Objection was made in principle to that very elastic method, and the more specific objection was made, or a point was made, that this 1,088 hours in 26 weeks was to be the maximum, that a manufacturer instead of working 40 hours a week for 20 weeks and 48 hours a week for six weeks, might work 80 hours a week for the first three months of that six-month period, and then get rid of some of the employees that he had been working for that length of time and hire another crop that could work for 80 hours a week for another three months, and so on, indefinitely.

There is some justification in that viewpoint, as they see it. We have changed that provision to read that the office and delivery people work 20 weeks at 40 hours and may work six weeks at 48 hours. Please note that is 48 hours in the case of office and delivery employees. Please note, too, that in that particular paragraph, namely paragraph (a) dealing with office and delivery people, there is no maximum number of hours per day provided; there is per week, but not per day. So that, subject to the final approval of the code, it would be possible for an employer to work a bookkeeper or some other office employee, or a chauffeur or delivery man, if necessary, nine hours a day or ten hours a day, but he would have to average that up during the week so that the maximum number of hours worked would not be, for the 20-week period, over 40 hours, subject to the exception stated, which has not been changed.

In paragraph (b), which deals with factory workers, we had that in our first code at 20 weeks at 40 hours and 6 weeks at 48 hours. We met some resistance to the 48 hours for 6 weeks, particularly from the Labor Department. They wanted that cut down, and we finally compromised that on the basis of 45 hours for the minimum period of 6 weeks, leaving the 20-week period at 40 hours, as it was before.

So that now, in the factory, the maximum hours are 20 weeks, 40 hours each; 6 weeks, 45 hours each. That is, you may work that much. These are maximum hours, understand, not minimum. When you are working on a 40-hour basis, you are limited to working 8 hours a day; but when you might be working on the 45-hour basis for a six-week period, or any part thereof, you may work 9 hours a day, if you wish. On the 45-hour basis, a manufacturer might continue to operate five days a week at nine hours per day, which would be 45 hours; or, he might work five days, eight hours each, 40 hours, and five hours on Saturday, or four hours, or whatever he cared to.

The same exceptions are in here that were in before, supervisory staff (including foremen), maintenance workers, engineers, and firemen, which exempted employees may not work in excess of the maximum hours stated except by the payment of one and one-third rate for overtime, if such employees are compensated on an hourly basis. Each week during any 26-week period shall be considered as a complete unit, and so forth. Then, we say, "If an excepted employee on an hourly basis works more than 40 hours and not more than 45 hours in any one week, the employer shall compensate him at the end of said week for the hours worked in excess of 40 hours at the extra rate or shall declare to the employee that such week will be considered as one of the 6 weeks in which a maximum of 45 hours is permitted. If such excepted employees are paid by the week, month, or on a yearly basis and enjoy vacation periods, sick leaves, and other benefits granted to salaried workers, they shall not be paid an additional amount for any reasonable overtime work."

We believed that that was a fair and proper provision, and we were supported in it by the Labor Department, and the labor advisory board representative.

Management Exceptions

In paragraph (c), watchmen, janitors and caretakers are exempted from the maximum hours provision in the office and also in the factory, as are also employees in a managerial, executive or other capacity who receive $35 per week, or more.

Paragraph (c) is not changed. Paragraph (e) is not changed, except in two respects. I call your particular attention now to the fact that in (e), which has to do with the wages or salaries paid to office employees, you may hire persons who do the work of office boys or office girls at 80 per cent of the minimum rate, if you choose to do so.

You may be interested in knowing why that is expressed just the way it is. You will notice that it says, "persons doing the work of office boys or office girls." We had it originally that office boys and office girls might be hired. They objected to that. They don't like to have the age distinction or discrimination put in the code. They said, "Please change that so it will apply to any person who does the work of an office boy or an office girl." There was no objection to that, and so we changed it.

They said to us, "You might hire a man 70 years old to do that work, and you could hire him at 80 per cent of the minimum wage, if you care to do so." However, at 80 per cent of the minimum wage, persons doing the work of office boys or office girls, could not, at any time, exceed five per cent of the total number in the employment unit; provided, however, that a small employer who might have less than 20 persons in his employ would be entitled to one such person, if he wanted one.

The other change we made in this paragraph, except for this office boy business, is almost literally taken from the P. R. A.—the President's Reemployment Agreement—the thing that came out along, I think, sometime shortly after the first of July, known as the blanket code.

We found that there was objection to the language in the President's Reemployment Agreement on the part of his administration. They didn't like the fact that it worked down to towns of 2,500 or less. We found that there was only one small manufacturer in the industry, so far as we could determine, in a town of less than 2,500, and we felt very sure that he would not be affected by it, therefore we eliminated that last breakdown of the classification of wages paid based upon the population of cities.

Age Distinctions

In (e), you will recall, we originally said that adult male employees should be paid a minimum of 40 cents, and that women and boys under 18 should be paid a minimum of 35 cents. Again, we struck that objection in Washington to age discrimination. So after checking on the situation to some considerable extent and finding that apparently the employment of boys between 16 and 18 was not such a serious thing in the industry (of course, you cannot employ them under 16) we eliminated the reference to boys under 18 years altogether. Now, our code says that male factory employees shall be paid 40 cents an hour, and female factory employees shall be paid 35 cents an hour; provided, however, that if a woman does the same kind and amount of work as a man, that she shall be paid the same wage that a man is paid.

(G) That is the partially incapacitated paragraph that has been in almost since the first. We believe our code was the first one to recognize that sort of a situation, and a number of other codes are following us in it.

Now, Mr. President and ladies and gentlemen, that covers the labor paragraphs of our code. I will stop long enough to ask, Mr. President, if I may, if there are any questions anyone would like to ask.

Discussion

Mr. Kurfees: Would you like to ask Mr. Trigg questions?

Mr. Goldsmith: The NRA officials of Baltimore have taken exception to the hours of labor of watchmen. I would like to have some information about that.

Chairman Trigg: I think you will have to give us a little more information before we can give you any information. You say the NRA officials in Baltimore have taken exception to the hours of work of watchmen. What exception do they take?

Mr. Goldsmith: They claim that there should not be unlimited hours for watchmen; that they should come in with other classes of labor.

General Manager McFadden: I think I understand Mr. Goldsmith's problem. As you will recall, until this code becomes effective, that if fifteen days after the President signs it, so far as your hours and minimum wage conditions are concerned, if you have taken advantage of the exceptions permitted for this industry and are so operating under the NRA, you will still be guided by those terms as announced to you on the 4th of August, and at that time there was a provision, similar to this, excepting watchmen, so that they are not bound by an maximum hours.

Now the Balitmore official board apparently hasn't understood that, and they are reading the President's Reemployment Agreement without connection with the special provisions for our industry and that, if they persist in it, should be clarified in Washington. We hope that in two weeks, or fifteen days time, all of that will be over, and all you will have to do will be to hand them a copy of this code, and say that there are no maximum hour provisions for watchmen.

Chairman Trigg: I think it may go just a little farther than that. I am glad, Mr. McFadden, that you said what you did, but I think there is such a thing as taking too much advantage of an exception. I don't know anything about what you are doing in Baltimore. But I think that we would all agree that just because watchmen and janitors and caretakers were exempted from the maximum hours of labor doesn't mean that we have an actual right, or if we do have the actual right, certainly we do not have the moral right to work watchmen for 12 or 14 or 15 hours a day, perhaps on Saturdays and Sundays too. There ought to be some place in there where we let our own good judgment, backed by our ideas of fairness and consideration for our employees, to enter into the situation.

Mr. Goldsmith, I do not know anything about what your situation is, but I am taking advantage of this opportunity to get over what it seems to me is an important thought in the matter, because we do have exceptions. Maybe we ought to be more careful than possibly we would be otherwise not to abuse them; because if we do, if it becomes known that the paint industry is taking advantage of some of these exceptions that we had to fight pretty hard to keep in the code, the President with one scratch of the pen can cut them out of our code, and they woll no longer be there. There will be no formalities or delay whatsoever with respect to his cutting them out if he wants to do so.

Walter F. Yarnell: Do I understand, then, that Mr. Trigg's interpretation is that if we work a watchman 60 or 70 hours a week we may still pay him the minimum wage of $15.

Chairman Trigg: Sometimes it is a lot easier to ask a question than it is to answer it.

I should not like to go on record by saying that you could work a watchman 75 or whatever hours you said, or 80 hours a week, whatever it may be, and continue paying him $15 a week, if that is what you were paying him. I do not believe that anyone who did that would be living up to the spirit of the National Industrial Recovery Act. I think possibly from a purely technical standpoint, taking the liberal reading of the code, provided you were not working him more than you did before this thing came up, and providing that you hadn't reclassified the work that he was doing in some way or other, so as to bring him ostensibly under the definition of a watchman, you might technically be inside of the provisions of the code, but you would not in my opinion be living up to the spirit of it, and to continue doing so might result in what I referred to a few minutes ago.

You know the PRA, as I remember it, I think that is where it appeared, had a provision calling for the inequitable adjustment in the wages of all employees, and I would assume that if an employer was paying a watchman $15 a week, which is the mimimum in the larger cities and in the code and in the PRA, today he would probably pay him something more than that, because an increase is certainly called for and we have agreed to do that very thing.

I do want to emphasize again that, of course, reason must be exercised with respect to exceptions. Failure to do it may work a hardship not only on the person who fails to do it, but on all the rest of the people in the industry who are being reasonable in the things which they do.

J. D. Patton: I have just listened to your explanation of watchmen. As I read this I think your watchmen, your male employees, would have to be paid 40 cents an hour under Section (f) of this Article, and not $15 a week.

Chairman Trigg: No, I don't think so. If you will look again, Mr. Patton, you will see that paragraph (c) exempts watchmen who come under either paragrph (a) or paragraph (b), and further on you will find that the 40-cent rate is provided for factory men and the $15 rate is the minimum for the office people; so that I think it applies to the office watchmen as well as to the factory watchmen.

Are there any other questions, gentlemen?

(Mr. Trigg continues)

Explanation Continued

All right now. The Presidential authority speaks for itself. That is unchanged.

Monopolies: Nothing in the code must promote monopolies, et cetera.

In Article VIII we agree to abide by the laws of any state if they are more stringent than the ones in the code; as a matter of fact we would have to do it anyway.

Article IX provides that certain reports shall be made.

Administration

Article X on administration has one new feature in it, right at the very beginning where it says, "This board shall be composed of the following members: Not more than three members without voting power to be appointed by the President." The President of the United States will give us three people to sit on our administrative board, without any voting power, but to sit there to watch what we do and assist us, cooperate with us, and in general be the touch between the administrator on the one had and the industry on the other. We will not be required to pay any expenses of those men. That will be taken care of by us in another role.

H. M. Howard: Is it arbitrary, have we any choice in any matters to be discussed to ask them not to sit in, or do they have full power to demand that they sit in?

Chairman Trigg: They will be just as much a part of our board as anybody else, and if a meeting is held of the board they must get a notice of that meeting and be advised in ample time so they can attend. If we have something that we want to talk over, and some of us want to get together and discuss it, I don't know of any reason why we couldn't do it, but at a meeting of the board they are just as much a part of our board as anybody else, except that they don't vote.

There have been some other minor changes in this, nothing, however, which affects the principle or the functioning of the paint industry recovery board.

I might say to you for your information that at the first meeting of the paint industry recovery board, which was held last Sunday night here in this hotel, we had 42 out of 48 members of the board present, which is pretty good record and starts us off in good shape. Furthermore, I may say to you, just to indicate the interest which the members of the paint industry recovery board have taken, I had occasion to send telegrams to 47 members of the Board. We have 48 members and the chairman is one member, so 47 telegrams were sent out on one afternoon and by noon the following day I had 47 replies. Every single one of them were back by noon the next day. I think that augurs well for this board, and for the interest in its future conduct.

At our meeting last Sunday night we decided, tentatively at least, on a plan of handling complaints as they might arise. Of course, whatever plan we work out must have the approval of the administrator in Washington; so as soon as the convention is over we shall make it our business to set up a plan and present it to the administrator for, we hope, his approval. We believe that just as soon as the effective date arrives and the code is in effect and the law of the land, as they say in Washington, there is apt to be some considerable misunderstanding, possibly complaints, charges that a competitor has violated the code, and that some kind of machinery should be set up to check those things, and to clean them up as quickly as possible.

Local Complaints

So the tentative set-up that we have is this: That each one of the community representatives on the paint industry recovery board, and there are 20 community representatives on that board, shall constitute himself as a key man in his own particular trading area to clear all the local complaints through as far as it is possible for him to handle them. We expect that there may be, as I said, lots of misunderstanding. For example, a manufacturer might not immediately, perhaps because of a mistake of a clerk, put the terms of 60 days, 2 percent off for cash in 10 days in the trade sales end, or 30 days 1/10 in the industrial end of it, into effect. A competitor might get one of his invoices and see that some billing clerk or somebody had put down on the industrial sale 60 2/10, and make a complaint about it.

Another thing that might happen, some manufacturer might complain that a competitor was continuing to guarantee the life or the service of his product. He might still be selling some paint with a label on it reading, "Guaranteed for five years." Under the code that is prohibited, if it comes through approved by the President. Some manufacturer might say that this man has violated that provision of the code.

We think that those things, for a while, at least, will be largely misunderstanding, or inability of the manufacturer to immediately check up on everything, and that the local keymau could very well function as between the complainant and the accused, to straighten those things out between them, without any bad feeling and to get the accused manufacturer on the right track. Certainly that would be much better than having complaints go down to Washington, with the assurance of an interminable wait before definite action is taken on them, and to be made an official thing down there, with perhaps all of the unfavorable publicity that might follow it. We want to try to do a reasonable job on this proposition.

Our plan, however, is that we would require each keyman in each one of these 20 different districts to report every case

that comes to his attention and that he dispose of locally between the two people, wipe it out of the way—he must, nevertheless, report it to Washington, so that we may gradually, as rapidly as possible, build up a record of all of these cases and out of this record be able to make more definite decisions and make refinements of other decisions, so that in time we can have a chart to go by, something that we might send out to all members of the industry by way of interpretation of different things, so that there won't be after while much excuse for anybody not living fully up to the code.

If the keyman got some kind of a case that he could not settle, then that would have to be sent, with all of the facts, to headquarters in Washington and the necessary steps be taken there to start investigation, if that is the thing to do, or at any rate to accomplish an adjustment and a straightening out of the proposition. That might result if it was a complaint on lacquer of some kind, we might feel that the complaint should be referred to the five commodity lacquer people on our paint industry recovery board, for their opinion; or if it was varnish we might refer it to the five commodity varnish representatives on our board.

I mention that to give you an indication of the line of procedure which was discussed and, as I said, tentatively approved at the meeting last Sunday night of the Board.

Amendments. There is no change there. We would not be surprised to see the very last paragraph, that little paragraph of three lines, stricken out but it hasn't been so far.

Code of Fair Practices

This part of it is what we are doing for labor, and how we are backing the government in its very ambitious and very laudable plans to eliminate unemployment and bring back buying power and start the wheels of industry moving. So when we get over to Part 2 we have taken advantage of those provisions in the National Industrial Recovery Act that say that an industry may, by joint action and with the approval of the administrator, set up a code of fair trade practices, to eliminate from the industry abuses and unfair dealings of one kind or another.

There is misbranding, mislabeling and false advertising; gifts to employees of another, which is another term for commercial bribery.

Manufacturing restrictions are the old simplification program which we have taken care of in Schedule A back of the code.

Article XV is exchange of goods. Let me say in connection with these things, you may say to yourselves:—"What is it all about? We have had our agreements on commercial bribery, or misbranding, mislabeling, et cetera, on non-exchange, and on the simplification program, or, as it is called here, manufacturing restrictions." True, we have; but please bear in mind that what we have had on those and other things are only voluntary agreements between those members of the industry who chose to sign them. They were not compulsory so far as all members of the industry were concerned. They were not binding upon anyone who did not choose to sign them. They were not signed by all of the members of the industry by a great deal. Now we have in this code our first real opportunity to write these provisions into the law of the land, and it is just as mandatory, if this code with its present provisions is approved, it is just as mandatory that one manufacturer should not exchange the stock of another, it is just as mandatory that no manufacturer should put up any sizes that are prohibitive in the manufacturing restrictions, and that he should limit the number of colors to those that are provided for in the schedule A; it is just as mandatory that he should not misbrand or mislabel or make false statements with regard to his product, as it is that he must not commit arson, or robbery, or murder, or anything else that is against the law of the land. These things are just as much the law of the land when they do go into effect as any other things; so that this puts the teeth into the proposition that all the voluntary agreements in the world couldn't touch. It puts the United States government right back of it 100 per cent, with full penalty provisions for its violation.

Exchange of Goods

Now the exchange of goods paragraph, known by most of us as the non-exchange agreement, has had to be changed from that which we have had in the agreement that existed between ourselves, because we had in our agreement a penalty of our own that, if a manufacturer was found guilty of exchanging his goods for that of another manufacturer, he was penalized two or three times the value of the goods which he took back. We took the liberty of putting that into our code when we went down to Washington, but they couldn't see it that way. They didn't exactly like to be a collection agency for our industry, and so they required us to change that, and we have had to take that provision out. The real objection on their part seemed to be the fact that we were extending the non-exchange agreements beyond the manufacturer; that we were making them applicable to the manufacturer's customers; namely, the jobber or distributor, and Washington objected to that.

So what we have done in an effort to take care of that sort of a situation is to write it this way:

"It shall be a violation of this code for any manufacturer in the industry to take or allow to be taken in exchange for his own products, any products of the industry, or to give or permit the giving of any advice or assistance in facilitating such exchange or replacement, or to make or permit to be made any concessions, allowances, or gifts of any kind to promote or facilitate such exchange.

"Every member of the industry is required to enter into a written agreement with his jobbers and/or distributors whereby such jobbers and/or distributors agree to refrain from the practice prohibited by this article."

You see, what we are doing is requiring the manufacturer to enter into his own agreement directly with his jobber or distributor whereby he will bind the distributor not to violate the non-exchange agreement.

"It shall be a violation of this code for any member of the industry to deal or continue to deal with any jobber and/or distributor who shall have acted contrary to such agreement, provided that no member of the industry shall be held responsible for such dealings as he may have engaged in prior to the time he has received notice of the breach of such agreement by a jobber and/or distributor, and provided that no member of the industry shall be held responsible for such dealings after the paint industry recovery board has given approval for further dealings with a jobber and/or distributor who may have violated such an agreement. The paint industry recovery board may require each member of the industry to file a copy of each agreement which he may make with a jobber and/or distributor."

That seems to be the best provision that we could put in there.

Article XVI, Standard Terms of Cash Discount is just as it was.

Discussion

M. Arnstein: I believe that you and the code committee members who worked with you are fully aware of the fact that today in the United States, in paint, almost every dealer and jobber is more or less, roughly speaking, in the dumps. They have been through a terrible seige of times just the same as everybody else. They hve been giving all kinds of terms up to now. They haven't made any money in the last three or four years. Their capital structure has shrunk considerably. Their private assets that they possess have probably gone down to about 15 or 20 per cent of their original value.

Do you think in your mind, or in your associates' minds, that you can change the terms in this country suddenly, over night, by writing it into the code, and hold them to these terms, or does it mean, as I read it now, "On and after the effective date the terms granted by manufacturers, excluding export trade, shall not exceed: Trade Sales Accounts—2 per cent for cash in 10 days—net 60 days," et cetera, does that mean that the manufacturer gives the merchant 60 days to pay his bills, but that the merchant can take 60 days or more, or 90 days, to do it, or is it a violation of this cade if you don't enforce the terms according to this code? Will it be subject to complaints and fines if you can't make the man pay his bills in 60 days, or will he be permitted to take any additional time in which he can conveniently pay in an honest way? I don't mean the unscrupulous one that chisels along on everything that comes before him, but I mean the honest merchant, the honest-to-goodness merchant who is today in worse condition than he ever has been in his career? Can you change consistently the terms from the long terms that existed, or exist now, in the paint game over night to 60 days?

Chairman Trigg: Is that your one question?

Mr. Arnstein: Yes, sir.

Chairman Trigg: Yes, you can. I mean to say by that, if the entire industry does it. This isn't a case of just a few manufacturers getting together and deciding they are going to do it, but everybody must do it. It may mean that some merchants who have been in the habit of buying without much regard as to when they were going to pay for goods and expecting to carry it on indefinitely, will have to use a little better judgment in their ordering. They may have to buy in a smaller way and perhaps buy oftener in order to take care of their accounts when they become due. But when you ask the question. Can it be changed, I think there is only one answer, that if it becomes the law of the land, Yes, it can be changed; it will just have to be changed.

Written Agreements

Mr. Howard: May I ask one question? Every member of the industry is required to enter into a written agreement. Does that mean that when you open a dealer account you must have a form that you must have ready to file.

Chairman Trigg: It doesn't refer to a dealer at all. It only refers to jobbers and distributors, who in turn sell to dealers. That is the point we are trying to cover here.

Member: Why is there the difference between trade sales accounts and industrial sales accounts with regard to discount?

Chairman Trigg: I think the answer to that is a comparatively simple one. It has been the practice of a very substantial number of manufacturers, selling industrial goods, to sell them on a 30 days 1 off 10 basis. In setting up the code we followed what we believed to be the general practice, recognizing, however, that it was not the practice with some branches of the industry, that they were giving longer terms and greater discounts; that they would be put in little closer touch with the amount of money they had standing out if they did have the terms of 1/10 as we have them here.

The same reasoning was followed in setting up the trade terms of 60 2/10. More specifically in reply to your question, the reason for shorter time and a smaller discount to the industrial buyer than to the trade sales buyer is that the industrial buyer purchases his materials for his own consumption, to be promptly applied to the goods which he is turning out in production, while the dealer puts them on his shelves and sometimes carries them for three, four, six, eight or ten months, or whatever it may be; therefore, there is, we believe, a very definite justification for the difference in the terms in addition to the fact that we feel that we are following the general precedent of the industry, recognizing that there are exceptions.

E. F. Wilson: In reference to section (c) under exchange of goods, the second paragraph, I assume from that that as soon as this code is signed by the President, it will be necessary for a manufacturer who has distributor accounts on his books to make up written agreements and send one to each of these distributors. Assuming that the distributor refuses or neglects to sign and return this agreement, would the manufacturer then be compelled to discontinue selling him?

Chairman Trigg: I wouldn't say so, but I think it is the responsibility of every manufacturer to keep diligently after his accounts until he gets them. We all know that you cannot send out a form like that to everyone of your jobber accounts if you have very many and expect that they are all going to come right back immediately. But you have your salesmen calling on those people. They should be coached as to what to do, and reasonable efforts put forth continuously until you do get them all.

There is another case where I think the best answer to your questions is, the thing is a reasonable proposition and not an arbitrary one.

Mr. Merken's Question

M. J. Merken: On Article XVI, may I ask you this: Is it a violation if a sale is made in the trade sales to a buyer, and the purchase is paid within eighty or ninety days from the time of sale, and he is continually being shipped after it is known that the payments are being made in eighty or ninety days—is it a violation of this code?

Chairman Trigg: You are not referring to cash discounts, are you?

Mr. Merken: I am talking of net 60 days.

Chairman Trigg: Not cash discounts? No, I would not say that was a violation of the code. That may sound like an arbitrary decision on that subject.

Question on Datings

D. E. Spaulding: Will you please explain the relation between Article XVI and Article XVIII? If you don't mean 60 days, why was it put in there? You state in Article XVII where datings may be given and how they may be given. What we are trying to get at is a definite answer to this. Is it a violation if a man has an account 70 days' old or 80 days old, and he orders more material, to get another order without having paid for the first order? The only way that I can interpret the reading of this thing here is that it is a violation of the code.

Chairman Trigg: I think that would be a fine interpretation, if you want to put it on. My interpretation was based, again, upon trying to start off in a reasonable manner, in so far as some of these provisions are concerned. The point that you have raised is a question that comes up every time we talk of the code. It has never failed to come up. Every meeting that I have sat in somebody said, "What is going to happen if the dealer doesn't pay his bills until eighty or ninety days from the date of the invoice, and then they have to try to sell him as well as they can.

So I think the question of whether you are going to ship him a second order before he pays for the first one is not a question of the code so much as it is a question of the man's credit condition, whether he is entitled to get a second order that is charged.

I didn't have a chance to finish answering Mr. Merken's question before Mr. Spaulding asked his, because I didn't want to leave this thing just cold, as I stated it to Mr. Merken, without some further comment on it.

I don't care how much language you put in a code, it isn't going to help you to collect an account in sixty days from a dealer if he can't or won't pay you at the end of sixty days. We can't set up a collection department or collection codes that are binding on anybody outside of our industry. I think we all must recognize that there will be times when a customer just naturally cannot pay at the end of sixty days. Maybe he had every expectation of paying at the end of sixty days, when he placed the order, but something has happened that prevents him from doing it, and yet the man's credit is perfectly good. What are you going to do? The code doesn't say that you have violated it if you give that man a few days extra to pay that account.

Defeating the "Chiseler"

The danger in what I am saying to you (and I know it just as well as any one of you do) is that under the kind of interpretation that I am giving to you now, it might seem like encouraging (I think somebody used the term "chiseler"—maybe that is as good as any), the chiseler to take advantage of this situation and go around himself or send his salesmen to the customers of his competitors and say to them, "Don't say anything about it, but Merken makes you pay him in sixty days, but so far as I am concerned, if you can't pay at the end of sixty days, just let it go along."

That is the danger of it. But I am inclined to think, gentlemen, that there are safety factors in the situation to take care of that.

Washington is depending upon these codes being pretty much self-policing; that members of industry are going to be on the job checking up what the other fellow is doing all the time. I don't think any manufacturer in this industry can get by very long on something of that kind. If he was making a practice of winking at delinquent payments beyond the sixty days, I think some smart salesmen representing a competitor would find it out pretty soon. A lot of these customers are none too close-mouthed.

I can't think of any more unfortunate position for a manufacturer to be in than to have a charge brought against him, and supported, that he was trying to evade on a point of this kind, to cheat and take advantage of his fellow manufacturers and his competitors than to have himself exposed to fine, and a fine imposed on him, and if persisted in, probably followed up by a jail sentence.

I think that there are factors in this thing that will automatically check the fellow that might try to put over too much along that line.

Anything else, gentlemen, on that paragraph.

Mr. Schumann's Question

C. J. Schumann: On this Article XVI, I followed your explanation of this, if a man cannot pay me in sixty days, I cannot make a practice of taking his two months' or three months' note and tying him down to a time when I might get my money. If he does not pay me in sixty days, I shut down on him. I am holding the bag. Number two comes along and sells him for sixty days. He does not pay, and he is also holding the bag; he cannot sell him any more. Number three comes along and does the same thing, and so on. The fellow keeps on buying and keeps on in business; we just hold the bag and whistle and wait.

It seems to me, as I interpret that thing—I may be wrong—My interpretation of that has always been that I cannot bill on terms beyond sixty days, in trade sales, and I can't give the man the discount in seventy or eighty days. Today, if a man comes in who owes me $200 and says, "I have this $200 to pay you, but your bill is sixty days overdue. If you give me the 2 percent discount, I will pay you; if you don't, I will pay Bill Jones, and you can wait another two months." The chances are that you will take the 2 percent off and take the cash.

Chairman Trigg: That would be a violation, Carl.

Mr. Schumann: I realize it would. I grant you that.

Chairman Trigg: It would be a violation.

Mr. Schumann: I have to shut down on him.

Chairman Trigg: I made no such interpretation of it. I haven't made that interpretation, and I don't intend to, as far as I am concerned. I don't think that is reasonable. I think that there has got to be a certain amount of reason used in this situation; and, I repeat, if somebody tries to stretch that reason too far, they are automatically going to be checked up on.

Anything else?

Explanation Continued

(Mr. Trigg continued his explanation.)

Datings: On spring stock orders to established dealer and/or jobber accounts, there may be an April 1 dating given, with regular terms, one order to an account, and such orders may be shipped at the manufacturer's convenience after October 15. New accounts, trade sales, the maximum dating, initial stock only, to new dealer and/or jobber accounts, excluding export trade, shall be limited to four months from the date of shipment; provided, that orders shipped between October 15 and December 1 of any year may be with an April 1 dating, and with regular terms.

The reason for including that October 15 there is because if we provide that the manufacturer may supply established dealer accounts for shipment after October 15, then he ought to be permitted to do the same thing with new dealer and/or jobber accounts. There is no change in the other provisions in Article XVII.

Guarantees

Article XVIII—Guarantees. Those two paragraphs are just the same as they were, except that (b) formerly was (c), and we had another (b) in there. The other (b) was that paragraph which you will recall set forth the fact that the manufacturers, the jobbers and the dealers have their peak load inventory on approximately April 1, and that during the three succeeding months, April, May and June, they have got to convert that stock into sales, and into money, realize on it, and they have purchased that stock at the prices existing as of April 1, and therefore were entitled to an opportunity to get their money out of the stock during those three good months. Consequently, our paragraph (b) provided that during the months of April, May and June, that no trade sales, no manufactured trade sales should reduce the selling prices during that ninety-day period.

That was thrown out by the administration after a very determined battle was put up by the members of the code committee to keep it in. We were not able to do so. There were a number of objections to it. One of them was that it would prevent the manufacturer who did not do business through the dealer and/or jobber from cutting his price during the active months of the year, namely, April, May and June, and thereby stimulating business, and giving the buyer an opportunity to benefit by a reduction in price.

Please remember that the consumers board in Washington is one of the most active boards down there, and they are right on the job every minute, protesting everything that has in their opinion the least semblance of making the price any more than is absolutely necessary.

They had one complaint against this paragraph (b), which is now out, from one of the small mail-order houses sellin-direct to consumers. I said a small order house. It was not Sears-Roebuck or Montgomery Ward. This manufacturer wrote that he was just a small manufacturer doing a limited business, and he wanted his interest to be protected. He stated that he only had 10,000 salesmen, and it was going to be a very great handicap on him. I presume that that business probably was. He might have had a list of 10,000 salesmen who he considered were working on some kind of commission arrangement.

We couldn't make that paragraph stick. It had to come out. It came out only after we had exhausted every possibility that was at our command to keep it in.

Consignments

Article XIX—Consignment. We have a couple of changes in that. In the first place, we have refined or interpreted a little bit better the places where a manufacturer may warehouse his goods, if he cares to. This consignment clause does

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not prohibit manufacturers from carrying a stock of their goods in a public or private warehouse at their own expense in any section of the United States; provided that such stocks must not be warehoused with or for the account of any person, firm or corporation dealing in or handling as a merchant, or using as a painter, products of the industry.

Mr. Dabney called our attention the other day, last Sunday night, to the fact that it might be well to have in that paragraph something similar with regard to the storing of industrial goods with customers who were in the habit of using those goods. Of course, we just must not make any changes. I don't say that arbitrarily. We are now waiting for the President's approval, and any change. If we changed just one word in this code, it would have to start again at the bottom and come up to where it is now. So, we wouldn't like to even contemplate making any change now. But, the point that Mr. Dabney has made is one that should be taken up, and will be taken up, looking toward a modification or correction on that point as soon as the code is signed.

Then another change which was made, one manufacturer out of a total of seven manufacturers who appeared in Washington to protest any provision in our code—as I told you earlier this afternoon, out of over 3,000 manufacturers there were only seven there to make any protest—protested against the consignment paragraph or article, not that he objected to the consignment article, not at all. What he did object to was the fact that it gave manufacturers who now have consignment accounts the privilege of continuing those consignment accounts.

The reason that it was written that way was that we believed that most consignment accounts were the result of a bad credit situation, where the manufacturer felt, for his own protection, that he should take over the title to the goods, but perhaps left them with the dealer so he might have some goods to sell, and in the hope, from the manufacturer's standpoint, he might eventually turn that stock over.

However, in an effort to recognize the complaint that was made by this manufacturer and to give him the same opportunity in his own business that each manufacturer who has such a consignment account enjoys, if you can call it enjoyment, we have put this provision in, namely, "Until such time as an account as listed above (namely, a consignment account which is continued after the effective date of the code) is discontinued, such accounts may be similarly supplied by any manufacturer in the industry."

Provision for Other Accounts

In other words, if the Brown paint manufacturing company had a consigned stock with a dealer in Columbus, Ohio, they would be permitted, if they wished, to continue that consignment account with that dealer in Columbus, Ohio, after the effective date of this act, but there would have to be a record of that filed with the headquarters office. The information would be available as to who those accounts were and where they were located, and any other manufacturer might, if he chose, then go to that account in Columbus, Ohio, handling the Brown manufacturing company's goods under consignment and say to that dealer, "Now, you have so-and-so's goods under consignment here. We would like to ship you a stock of goods under consignment."

A manufacturer would have the right to do that if he was, if I may be permitted to say so, foolish enough to want to do it. But he has the right to do it anyway now. We hope that will satisfy the objection on that point.

The we added another paragraph here that is an addition: "The paint industry recovery board shall, subject to the approval of the Administrator, develop such plans as will effectuate the ultimate elimination of consignments from the industry."

In other words, we want the paint industry recovery board to consider seriously ways and means of the gradual elimination of such consignment accounts as are temporarily carried along. They can't give very much consideration to that until after the list of the accounts is made up and we know who they are and where they are located, and so forth. Then the board can commence to give consideration.

Free Deals. Nothing much has been changed in that. It is just practically the same situation.

Discontinuance of Shades and Colors is unchanged.

Selling Below Cost

Selling Below Cost. You will notice the absence there of the original first paragraph which referred to the package schedule, the package differential schedule, which was in the back part of the code. We were not able to make that stick. The administration objected to it on principle. They said that those package differentials guaranteed a profit to the industry, which is true. As a matter of fact, we have to have a profit on them. We never pretended they did not include a profit, and we assured the administration to that effect. They have stricken it out.

I am now reading from a letter signed by General C. C. Williams, deputy administrator, dated October 17, addressed to the chairman:

"As a result of my telephone conversation of this date with you, it is apparant that my letter of October 16, on the code of fair competition for the paint, varnish and lacquer manufacturing industry was not clear."

General Williams's letter of the sixteenth came to me on the morning fo the seventeenth, and in it he discussed the principle that he objected to it on principle, and also discussed the amount of the differentials, and that there was probably in some of them a pretty substantial profit, which we had assured him was the case, because we told him that on the small package goods, the industry had to have a chance to average up for some of the other things. After getting his letter, I confess I didn't know whether General Williams was saying that they objected to it on principle, or whether they objected to it because of the scale of figures which we used. I promptly telephoned to Mr. McFadden in Washington, asked him to please see General Williams, and find out from General Williams what his real position was, because if he objected on principle, then we could have nothing more to say. On the other hand, if the real objection was with respect to the amount of the differentials in any one size, one or more sizes, then that would have meant that we had done a pretty poor selling job, and we thought we had done a pretty fair one and that in such event, if that was the case, please say to General Williams that the code committee would be sitting down on his doorstep probably the next day, to start arguing all over again with him.

So then General Williams wrote the letter, the first paragraph of which I have read, in which he says it is apparent his letter was not clear. Then he continues: "I object definitely on principle to the idea of a package differential as set forth in your code, and do not desire to recommend to the administrator for the approval of the President a code containing such a differential.

"Mr. McFadden went over the matter with me in great detail this morning, but in view of the fact it is not figures that are in question, it does not seem necessary for your committee to present additional data."

I guess maybe he was just glad not to have the committee down there again, because we had put up some real arguments to him.

Lacquer Thinners

We jump now right into the paragraph on selling below cost. This lacquer thinner paragraph, you will notice, is now expressed a little differently than it was in earlier editions of the code. What the lacquer thinner clause says now is that lacquer thinners must not be sold at a price less than the sum total of the ingredients which go into it at market price.

Now, I think you men understand pretty well the reason for this exception, namely, the fact that we are, or have been, in a way at least, in competition with the solvent manufacturers in this business, some of whom have and probably do sell thinners as such direct to the large consumer, and others who, while they have not sold the thinners as such in that they did not compound them themselves, nevertheless did go to the consumer and tell him how he might mix them and thereupon the solvent manufacturer would sell the consumer, a large automobile manufacturer, if you please, the various solvents in the quantities which he required and he would do his own mixing.

That has been a very contentious proposition and we have not finally got it worked down to this basis as a result of conferences with the solvent manufacturers who have protested to us with great earnestness, and we have every reason to believe they mean exactly what they say, that they do not desire to sell to consumers, if any one of them has done it in the past, and it is our hope that we are going eventually to work around to a place where we are not going to have this competition at all from the solvent manufacturers.

In the meantime, however, we have put this paragraph in the way we have it now, and the Solvents Institute in their code will put in their code a corresponding paragraph, a letter to which effect I have in this hotel in my room, assuring us that they are going to handle it so that if they should do any compounding, they must not sell it at less than the sum total of their selling prices covering the ingredients that go into such a compound. In other words, their selling price would be our cost, so that means they couldn't sell under the price at which any one of us could sell if we wanted to do so, and of course it still limits the transactions so far as lacquer thinners are concerned, to the large bulk sale—that is to say, tankcars and tankwagons containing not less than 1,000 gallons if sold and delivered to one customer.

We have some changes in the other paragraphs of Article XXII. We are still standing up on the market replacement cost of raw materials. That is still in our code and we are sort of holding our breath, but we hope it is going to come through with the President's signature.

Containers and/or packages, paragraph (3), is just the same.

Cost of Processing

Cost of Processing:—The cost of processing, you will remember, originally was covered by a schedule in the back of the code which went into considerable detail as to the various items which were to be figured as a part of the cost, and I think it was so complete that it rather overwhelmed the people in Washington and they thought it was going a long ways, so we finally agreed to cut out the schedule altogether and just say, "To include all direct costs (such as power and labor), depreciation figured in accordance with provision of the Federal income tax laws, plus a proper proportion of all indirect factory expenses (excepting interest on investment), in accordance with the share each product should bear, provided that the distribution of indirect factory expense per unit of production shall be on the basis of the average rate of utilization of plant facilities of profit-making producers during the years 1928 to 1932, inclusive, and provided that such average rate shall not include any plants not in operation."

Do you understand all that clearly?

("No" from the audience.)

Chairman Trigg: Well, this came from some of the expert accountants in Washington, who stand alongside the deputy administrator, and they just hand these things right over to you without having stopped to thing much about them. When they gave us this language I asked the man who was responsible for it if he would be willing to come out to Chicago on Tuesday, October 31, and tell the members of the paint industry what it meant, and he assured us he thought it was a very simple thing, that there was nothing difficult at all about it. However, it is a thing that will have to be worked out largely by the administration getting certain figures and statements, and so forth, from the income tax division of the Treasury Department on the business of the profitable concerns, as they say here.

I want to see if I can give you an explanation that maybe you can understand and I can understand as I go along. I think this will have to be worked out in this way: In the first place, there would have to be certain concerns picked out to be used as typical units of production and they would be the concerns that were operating on a profitable basis, and hence presumably efficient, because the purpose is not to permit of our using an inefficient plant as a basis; and having picked out say twelve or fifteen or twenty concerns as typical ones, maybe selected in different sections of the country and different sized plants, then they would arrive at a figure to represent the average annual production of those plants for the years 1928 to 1932 inclusive, five years, as compared with the total plant capacity.

How Stipulations Apply

To illustrate: Suppose they found that these fifteen or twenty concerns, or whatever number they use, had an average plant capacity of 100,000 gallons of paint or of varnish or of lacquer; and suppose they found that for the five-year period an average annual production of those plants was 70,000 gallons per year. That would mean, then, that they had arrived at a figure of 70 percent as the average figure to use for the purpose of this paragraph. Then they would say to all other manufacturers, you must for the purposes of this selling below cost paragraph and not for any other purpose—but let me say this, parenthetically, that this selling below cost paragraph has nothing to do with the regular cost figuring in your business. Somebody asked me one day if he would have to figure his inventory all over again on this basis. It has nothing to do with inventory or regular cost figures, or anything else. The only place where the selling below cost paragraph enters into the picture is this: if any manufacturer is figuring on a very substantial volume of business, maybe supplying the United States government or the state or some large consumer, where he knows he has to get down awful close on it, before he makes that very close price he will say, wait a moment, I had better check up with the paragraph on selling below cost to see if in making the price of 87½ cents a gallon that I am figuring on making, I am not selling below the cost as arrived at by using this formula.

Now, to go back to where we were, we have arrived at the fact that 70 percent is the average production as compared to the capacity of these plants that are used for a basis. Then we through our administration, with the approval of the administration in Washington, would say to all paint manufacturers, now for the purposes of this paragraph, figuring costs to this formula, you must distribute your overhead on the different products you manufacture as though you were running your plant 70 percent of capacity, even though you might be running it only 50 percent of capacity. For instance, you take the figures that I used. Suppose some plant had a 100,000 gallon capacity and had an average of 70,000 gallons production over a five-year period, but in 1933 might have turned out only 50,000 gallons. If that plant had an overhead of $10,000, they would have to load that $10,000 ratable in the ordinary cost figuring as those do it who use their immediate past experience—they would have to load that on 50,000 gallons of material or they would have to put 20 cents a gallon on each gallon if it was all the same kind of material that they were making. As materials differ, of course, the load might be distributed a little differently.

However, for the purpose of this clause, the manufacturer couldn't do that. Even though he had only a 50,000 gallon production in 1933, he would still have to figure as though he had a 70,000 gallon production and he would have to divide up that expense at the rate of a 70,000 gallon production, or about 14 cents a gallon rather than 20 cents a gallon.

That is what that paragraph means. I don't know whether I have been able to state it clearly or not.

Ten-Percent Paragraph Out

We had in our original code, you may remember, after saying all the things that must go in, we would add 10 percent to cover a portion of the general administrative and overhead expense outside of factory. The administration wouldn't stand for a flat 10 percent figure. That had to come out, but in place of that we have this clause in here which doesn't mean anything yet, but which will: "There shall also be included in the cost a proportion of the general and administrative expenses, such proportion to be determined and to be recommended by the paint industry recovery board to the administrator for approval."

There will be some kind of a basis worked out for adding something to the cost, the factory cost, to give us back a part of our general overhead expenses. What that will be nobody knows. They suggested in Washington when we discussed it, that we might say all of the general and administrative expenses after factory, excepting executive salaries and selling expense, including advertising. I said that I didn't know what would be left, that that is a pretty big part of it. Further than that, we have all kinds and shades of schemes of doing things. There are manufacturers who don't pay themselves any salaries. They had a small business and they just take a little out when they want it, and what profit they have at the end of the year, they pay themselves something out of that, and that is the way it goes. Then, of course, we have the other type of concerns who just pay straight salaries to their executives and to their salesmen and everybody else, so it would be awfully difficult to determine just what the elements, if you are going to describe them as elements, are that are to go into this code. So that has been left open for further consideration.

I would like to call your attention to this fact, gentlemen: You will remember the very excellent report made by Mr. Atwood of the Federation of Production Clubs yesterday morning, and the reference made by him to the fact that those men in the production clubs were a part of our manufacturing organization and were anxious to serve and be helpful every way they can. We have given them a job. We have them, through a committee, thinking about some of these paragraphs in here through their accounting people and we are working in various ways to get these different provisions in here all set up so as to be able to present them to the administrator, we hope, for his approval, before the effective date of the code rolls around, even though it might be signed today.

Competitive Relations

Competitive relations, article XXIII, is the same except that we were obliged to leave out one paragraph we had in here which prohibited a manufacturer from advertising that he continually sold his product for less money than anybody else. They wouldn't stand for that without some qualification so we thought it best to take it out.

Article XXIV, returned goods, is unchanged and I think there is no change in the simplification program.

General Discussion

Mr. President, that is the code. I would be glad to answer any questions I can.

Mr. Kurfees: Gentlemen, have you any questions you would like to ask Mr. Trigg with reference to the code?

Transportation Costs

J. C. Corcoran: I should like to inquire if the inclusion of transportation costs, f.o.b. destination, might preclude the possibility of the national distribution of your product. It is sometimes necessary in order to have national distribution, to get that product to the dealer at a cost that will enable him to make some profit, and as a national advertiser, it is your thought to have your product purchasable at all points throughout the country. I am just thinking that there is a possibility at some point where freight rates are very high, that in order to have national distribution, the inclusion of transportation costs, f.o.b. destination, might not enable the manufacturer to do that if he is prohibited from selling below cost.

Chairman Trigg: Let me see if I understand your question. You are from the Alabastine Company. You say that you are referring to the section of article XXII which says that to the other cost elements must be added the freight, if any, to destination, and then because of the inclusion of freight in the cost, it might well be that on some products it would mean that the cost would be higher than the selling price to the dealer. Is that correct?

Mr. Corcoran: The selling price to the trade, enabling the dealer to make some little profit on his turnover.

Chairman Trigg: Well, if it hadn't occurred to us that this paragraph would anywhere have any effect on the dealer business, I mean the sales from the manufacturer to the dealer, because the margin of profit between the cost and the selling price on dealer business is usually sufficient to take care of any item such as you have spoken about. Our experience has been that it isn't always the selling price to the dealer that is so bad, as the things that you have to do for the dealer, the advertising you have to supply, and other expenses that you are put to, that pulls your profits down. Of course, this thing only deals with the selling price as compaerd with cost. It has nothing to do with advertising or anything else.

Now, you present a proposition, if I get it correctly, in which you raise the question that it might be that such a thing would happen. Of course, that is a pretty difficult thing for somebody to answer, because I would have to just wander around in a field of imagination, as you did in making the suggestions, unless you do have some specific information on it that would be the basis of giving that point consideration.

I would like to suggest if you haven't got it, that you make it your business to check up on that thing, and we would appreciate your communicating with us about it, if you will, if you find there is any necessity for doing so, because then it can be referred to the paint industry recovery board and considered in due course by them.

Mr. Corcoran: I bring up the question, Mr. Trigg, because this code, unlike some others we have had to deal with, does not provide for meeting an established delivered price on your product, in which event it might be necessary to absorb a part of the freight. According to this code, it might be impossible for a manufacturer to place his product at some far distant point and thereby reap the benefit of national advertising, without that manufacturer possibly selling below cost.

Returned Material

F. C. Atwood: Some manufacturers have been faced occasionally with the situation of having material come back, and they have been in the habit of unloading that material probably at below cost. They are wondering what they will do in the future.

Chairman Trigg: There isn't any answer to it except that you will have to abide by the code. I suggest that that be another one of the matters that your very efficient production group get busy on and see what you are going to do about it.

Code of Fair Competition

The code of fair competition, approved for the paint, varnish, and lacquer industry under the national industrial recovery act and adopted as a part of the by-laws of the National Paint, Varnish and Lacquer Association, is as follows:—

Article I

Purpose

For the purpose of effectuating the policy of title I of the act of June 16, 1933, known as the national industrial recovery act, the following provisions are established as a code of fair competition for the paint, varnish, and lacquer manufacturing industry.

Article II

Definitions

The term, "the industry," means all persons in the continental United States engaged in the manufacture of paint, kalsomine and water paint, varnish (including shellac varnish) lacquer, and kindred products, including putty, semi-finished base materials for lacquers, thinners, and diluents (when such semi-finished base materials are sold or offered for sale in competition with the finished products of this industry), liquid and plastic roof coatings and roof cements, and artists' colors; and/or such branches or subdivisions thereof as may from time to time be included under the provisions of this code, provided that if any member of the industry also manufactures products of any other industry, the provisions of this code shall apply only to that part of his business which is included in this code. The term, "export trade," means any business transacted with any purchaser for shipment of products of the industry outside of the continental United States.

The term, "employee," as used herein includes any person engaged in any phase of the industry in any capacity in the nature of employee irrespective of the method of payment of his compensation. The term, "employer," as used herein includes anyone for whose benefit such an employee is so engaged. The term, "member of the industry," includes any manufacturer who shall be subject to this code. The term, "member of the code," includes any member of the industry who shall expressly signify assent to this code. The term, "association," herein means the American Paint and Varnish Manufacturers' Association, Inc., and the National Paint Oil and Varnish Association, Inc., or their successor or successors. The term, "association headquarters," means the office maintained jointly by the associations at 2201 New York avenue, NW., Washington, D. C. The term, "trade sales," as used herein means all sales to jobbers, dealers, painters, automotive refinishing shops, and sales made directly to the consumer, with the exception of such sales as are hereinafter defined as "industrial sales." The term, "industrial sales," as used herein means all sales to the following classes of buyers, covering products of the industry used by such buyers on their products or for the finishing of their equipment and for the painting, upkeep, and maintenance of their plants, equipment, tenements, and for any other purpose.

Industrial plants of all kinds (such as automobile manufacturers, implement manufacturers, furniture manufacturers, etc., etc.)

Transportation companies (including street railways, bus, and air transportation companies)

Car and locomotive builders

Public service companies

Oil refiners and pipeline companies

Packing houses

Steel manufacturers and those who fabricate their own products.

Bridge builders and bridges.

Coal or other mining operations

Steamship lines, shipyards, wharves, and docks

All departments of any State, county, municipal, or other political subdivisions, but only for the following products: traffic paint; road paint; products used on bridges, trucks, and machinery; automobile license tag coatings; or materials for finishing furniture, or any other products manufactured in prisons or reformatories. All other business from State, county, municipal, and other political subdivisions, such as products used on buildings, institutions, etc., to be classified as "trade sales."

All departments of the United States government, regardless of usage.

Article III

Industry Law and Effective Date

On and after the fifteenth calendar day after the President of the United States shall have approved this code, the provisions hereof shall constitute standards of fair competition for the industry and shall be automatically binding upon all members of the industry, except that all articles of this code which are included in part 2 hereof shall not apply to export trade.

Article IV

Collective Bargaining

In accordance with section 7 (a) of the act of June 16, 1933, known as the national industrial recovery act, it is agreed: (1) that employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from interence, restraint, or coercion of employers of labor or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment approved or prescribed by the President.

Article V

Minimum Wages and Maximum Hours

(a) No employee engaged in accounting, clerical, office, or delivery service in any office or in any other place or manner, excepting employees in retail stores and excepting outside salesmen, shall work or be permitted to work in excess of forty hours per week for twenty weeks and forty-eight hours per week for six weeks in any twenty-six-week period.

(b) No factory or mechanical worker or artisan shall work or be permitted to work more than forty hours in one week nor more than eight hours in any one day; provided, however, that during any six weeks of a twenty-six-week period (the first period to begin on the effective date of this code) employees may work not more than forty-five hours a week nor more than nine hours in any one day, with the exception of (1) supervisory staff (including foremen), (2) maintenance workers, engineers, and firemen, which excepted employees may not work in excess of the maximum hours stated above except by payment of one and one third rate for overtime if such employees are compensated on an hourly basis. Each week during any twenty-six-week period shall be considered as a complete unit of employment for the purpose of paying for overtime to excepted employees. If an excepted employee on an hourly basis works more than forty hours and not more than forty-five hours in any one week, the employer shall compensate him at the end of said week for the hours worked in excess of forty hours at the extra rate or shall declare to the employee that such week will be considered as one of the 6 weeks in which a maximum of forty-five hours is permitted. This does not, however, mean that an excepted employee, when necessary, may not work more than forty-five hours at the extra compensation. If such excepted employees are paid by the week, month, or on a yearly basis and enjoy vacation periods, sick leaves, and other benefits granted to salaried workers they shall not be paid an additional amount for any reasonable overtime work.

(c) The maximum hours fixed in the foregoing paragraphs (a) and (b) shall not apply to watchmen, janitors, or other caretakers; nor to employees in a managerial, executive, or other capacity who receive $35 per week or more; provided that with respect to the exceptions in this paragraph and in paragraphs (a) and (b) of this article there shall be no evasion of this code by reclassification of the function of workers. A worker shall not be included in any one of the above exceptions unless the identical functions which he performs were identically classified on June 16, 1933.

(d) The provisions for maximum hours set forth in paragraphs (a) and (b) of this article establish a maximum number of hours of labor per twenty-six-week period for each employee so that under no circumstances shall any employee knowingly be employed or permitted to work for one or more employers in the industry in the aggregate in excess of the prescribed number of hours.

(e) Employers in the industry, subject to the exception provided in paragraph (h) of this article, shall not pay any of the classes of employees covered by paragraph (a) less than $15 per week in any city of over 500,000 population, or in the immediate trade area of such city; nor less than $14.50 per week in any city of between 250,000 and 500,000 population, or in the immediate trade area of such city; nor less than $14 per week in any city or town of less than 250,000 population, or in the immediate trade area of such city or town; provided that employers in the industry may pay to any class of employees covered by paragraph (a) who perform the work of office boys and office girls, not less than 80 percent of the minimum wage designated by this paragraph, provided that the number so excepted shall not exceed 5 percent of the total employees of the employer and provided, further, that each employer may have at least one such employee. Population for the purposes of this code shall be determined by reference to the 1930 Federal census.

(f) Employers in the industry, subject to the exception provided in paragraph (h) of this article, shall not pay any employee of the classes covered by paragraph (b), or employees excepted therein, namely, supervisory staff (including foremen), maintenance workers, engineers, and firemen, less than 40 cents per hour to male employees, or less than 35 cents per hour to female employees. The foregoing distinction in minimum rates between male and female employees is not a discrimination by reason of sex but because of a difference in the work done. Where female employees do the same kind and amount of work as male employees they shall receive the same wages. It is agreed that this paragraph establishes a guaranteed minimum rate of pay regardless of whether the employee is compensated on the basis of a time rate or on a piecework performance.

(g) The provisions of paragraphs (e) and (f) of this article shall not apply to any employee partially incapacitated through age or otherwise, who has served not less than 10 years in the continuous employment of the employer, provided that the number so excepted shall not exceed 5 percent of the total employees of the employer, and provided that each employer may have at least one such employee, and provided further that the minimum wage paid to such employee shall not be less than 30 cents per hour.

(h) Employers in the industry shall not pay less than 90 percent of the minimum wages provided in paragraphs (e) and (f) of this article, to employees in the Southern States. For the purpose of this article, the Southern states are defined as—Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia.

(i) No person under the age of sixteen shall be employed in the industry.

Article VI

Presidential Authority

As required by section 10 (b) of title I of the National industrial recovery act, the following provision is contained in this code: The President may from time to time cancel or modify any order, approval, license, rule, or regulation issued under title I thereof.

Article VII

Monopolies

No provision in this code shall be interpreted or applied in such a manner as to: (1) Promote monopolies; (2) permit or encourage unfair competition; (3) eliminate, oppress, or discriminate against small enterprises.

Article VIII

State Laws

Within each state, members of the industry shall comply with any laws of such State imposing more stringent requirements, regulating the age of employees, wages, hours of work, or general working conditions, than under this code.

Article IX

Reports

The Paint Industry Recovery Board, through association headquarters, shall collect and provide all reports required by the Administrator under the national industrial recovery act. Every member of the industry shall furnish such reports as are required pursuant to such requirements.

In addition to information required to be submitted through the Paint Industry Recovery Board, there shall be furnished to government agencies such statistical information as the Administrator may deem necessary for the purpose recited in section 3 (a) of the national industrial recovery act.

Article X

Administration

After this code shall have been approved by the President of the United States, it shall be administered through the association by a board to be immediately created and to be known as the "Paint Industry Recovery Board."

This board shall be composed of the following members: Not more than three members without voting power to be appointed by the President, the eight members of the present general code committee, twenty members, representing commodity groups, twenty members representing communities.

The members of the board representing commodity groups shall be elected as follows: Five members to be elected by paint manufacturers, five members to be elected by varnish manufacturers, five members to be elected by lacquer manufacturers, five members to be elected by kalsomine and water-paint manufacturers. Provided that each of these groups shall contain two members from the Eastern States, one member from the States in or west of the Rocky Mountains and two members from the remaining States. Nominations for election to the board for said commodity groups shall be made by members of the industry at large, regardless of membership in any association, and the nominations so made shall be submitted to a mail vote of all members of the industry throughout the United States and those receiving the highest number of votes in each group shall be declared to have been elected to represent the commodity groups. The members of the board representing communities shall be elected in the following manner: One each to be elected by the members of the industry doing business in the logical trading areas of the following cities, which manufacturers shall be called together for the purpose of such election by the president of the local paint club, or local paint manufacturers' association if any such exists: Atlanta-New Orleans, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas-Houston, Denver, Detroit, Kansas City, Los Angeles, Louisville, Minneapolis-St. Paul, New York, Philadelphia, Pittsbugrh, Saint Louis, San Francisco, Seattle-Tacoma-Portland.

No person shall be eligible for membership on this board who is not directly engaged in the manufacture of products of the industry, except the members to be appointed by the President of the United States. Furthermore, no company or group of affiliated companies shall have more than one representative on this board. Vacancies which may occur in the board for any reason whatsoever shall be filled by election in the same manner as hereinbefore provided. This board, subject to the approval of the Administrator, shall elect its own chairman, adopt its own rules of procedure (not in conflict with any other provisions herein contained), appoint such committees as may to it seem necessary from time to time, and may delegate its authority to such committees. A majority of the board shall have the power to recommend to the Administrator for his approval the addition of representatives of other groups or communities to its membership; provided that such additional members shall be elected in the same manner as above described.

The staff, association headquarters, and other facilities of the association shall be employed in carrying out the work of the Paint Industry Recovery Board. Such funds as may be required for the work of this board shall be subject to appropriation by the budget and finance committee of the association. All members of the industry or groups thereof who qualify as such under this code are eligible to membership in the American Paint and Varnish Manufacturers' Association, Inc., or its successor, without payment of initiation fee, which has been temporarily waived. If group membership, such groups shall pay into the treasury of the American Paint and Varnish Manufacturers' Association, Inc., a total amount equal to the dues of each member of such group as if each member were a direct member of the American Paint and Varnish Manufacturers' Association, Inc. If for any reason an eligible manufacturer does not desire to join this association he may, nevertheless, receive all of its benefits, including participation in this code, by paying a fee to its treasurer equal to the dues, provided that should any member of this code desire not to become a member of the association and desire not to pay to its treasurer a sum equal to the dues, he shall nevertheless pay his proportionate share of the amounts required to pay the cost of assembly, analysis and publication of necessary reports and data and of the maintenance of this administrative authority and its activities and the Paint Industry Recovery Board shall assess each such member of the industry with his proportionate share based upon the value of sales or otherwise as the Paint Industry Recovery Board may prescribe, subject to the approval of the Administrator.

The Paint Industry Recovery Board shall have full responsibility for its expenditures within the limits of such appropriations as are made from time to time, provided that no traveling or other expenses of board members shall be paid out of the association funds when attending board meetings, but actual expenses of members of the board when engaged in the business of the board, other than attendance at board meetings, may be paid out of such funds provided prior authority for such expenditure or expenditures has been given by the board.

Article XI

Amendments

Such of the provisions of this code as are not required to be included therein by the national industrial recovery act of June 16, 1933, may, with the approval of the president, be modified or eliminated as changes and circumstances or experience may indicate. It is contemplated that from time to time supplementary provisions to this code will be submitted for the approval of the President to prevent unfair competition in price and other unfair and destructive competitive practices and to effectuate the other purposes and policies of title I of the national industrial recovery act, consistent with the provisions hereof. Members of the industry or a local paint manufacturers association, if any such exists, shall submit desired amendments of this code to the Paint Industry Recovery Board through association headquarters. By agreement of a majority of the board, an amendment, so received or one initiated by the board itself, shall be referred to the industry in the following manner: those members of the board who represent the commodity groups shall submit the proposed amendment to their respective groups, if in their opinion it is germane to the interests of such groups; those members of the board who repersent manufacturers from the several cities shall call meetings of the manufacturers in their communities. The several board members shall then submit individual reports to association headquarters, which shall collate them and submit a full report to the board. Thereafter the board shall vote on submitting the amendment to the government and shall so submit it if at least two thirds of the board vote to do so, provided that the proponent of any amendment shall have the right to submit such amendment direct to the National Recovery Administration for its consideration.

By presenting this code the members of the industry do not thereby consent to any modifications thereof and reserve the right to object individually or jointly to any such modifications.

Part II—Trade Practices

Article XII

Misbranding, Mislabeling, and False Advertising

Misbranding, mislabeling, and false, deceptive, and misleading advertising are prohibited by this code.

Article XIII

Gifts to Employees of Another

It shall be a violation of this code for any person engaged in the industry, to offer or give—or to permit any representative of his to offer or give—any commission, gratuity, or other thing of substantial value to employees of his customers or prospective customers, except in the case of payments made with the consent of the employer for a definite service rendered.

Article XIV

Manufacturing Restrictions

It shall be a violation of this code for any manufacturer to fail to abide by the manufacturing restrictions as set out in schedule A which is attached hereto and made a part of this code, provided that this article shall not apply to export trade and provided further that paragraphs 2, 4, 5, and 6 of schedule A shall not apply to products commonly known as 5-, 10-, and 25-cent merchandise which is sold at retail to the consumer at not more than 25 cents per package.

Article XV

Exchange of Goods

The practice of taking in exchange for one's own goods, industry products of another manufacturer, distributor, or dealer, is unethical, unfair, and is hereby prohibited. It shall be a violation of this code for any manufacturer in the industry to take or allow to be taken in exchange for his own products, any products of the industry, or to give or permit the giving of any advice or assistance in facilitating such exchange or replacement, or to make or permit to be made any concessions, allowances, or gifts of any kind to promote or facilitate such exchange.

Every member of the industry is required to enter into a written agreement with his jobbers and/or distributors whereby such jobbers and/or distributors agree to refrain from the practice prohibited by this article. It shall be a violation of this code for any member of the industry to deal or continue to deal with any jobber and/or distributor who shall have acted contrary to such agreement, provided that no member of the industry shall be held responsible for such dealings as he may have engaged in prior to the time he has received notice of the breach of such agreement by a jobber and/or distributor, and provided that no member of the industry shall be held responsible for such dealings after the Paint Industry Recovery Board has given approval for further dealings with a jobber and/or distributor who may have violated such an agreement. The Paint Industry Recovery Board may require each member of the industry to file a copy of each agreement which he may make with a jobber and/or distributor.

Article XVI

Standard Terms of Cash Discount

On and after the effective date the terms granted by manufacturers, excluding export trade, shall not exceed:—Trade sales accounts, 2 percent for cash in ten days, net sixty days; industrial sales accounts, 1 percent for cash in ten days, net thirty days; except that the discount to trade sales accounts may be

extended to the tenth day of the month following purchase and the discount to industrial sales accounts may be extended to the twentieth day of the month following purchase to customers who regularly discount in the month following purchase, and provided that no discount shall be allowed after the discount date.

Article XVII

Datings

Except as specifically provided by this article, members of the industry shall not grant any datings on the sales of any industry products.

(a) *Spring Stock Orders.*—Datings on orders to established dealer and/or jobber accounts, excluding export trade, shall be limited to datings on spring stock orders shipped at the manufacturer's convenience after October 15, with an April 1 dating and regular terms; one order to an account.

(b) *New Accounts.*—The maximum dating on trade sales stock orders (initial stock order only) to new dealer and/or jobber accounts, excluding export trade, shall be limited to four months from the date of shipment and with standard terms, provided that orders shipped between October 15 and December 1 in any year may be with an April 1 dating and with regular terms.

(c) *Roof Coatings and Cements.*—A maximum dating of four months may be given on a carload of not less than 40,000 pounds of liquid and plastic roof coatings and/or roof cements, not including other products, whenever the lowest published less-than-carload freight rate (by rail or water) is more than 50 cents per cwt.

(d) *Anticipated Discount.*—If any dating shall be permitted under this article, an anticipated discount may be allowed to the extent of one-half of one percent a month.

Article XVIII

Guarantees

(a) *Price Guarantees.* — Guarantees against price decline shall be prohibited except in the case of an order on which a dating has been allowed under article XVII, when such a price guarantee may be given for a time not to exceed the dating period granted.

(b) *Time Guarantees.*—Definite time guarantees on the life and/or service of the products of the industry are hereby prohibited.

Article XIX

Consignment

The practice of supplyig accounts on consignment and/or trust certificate agreements, except as hereinafter provided, is prohibited. This also includes consignments which are sometimes made under so-called "warehouse agreements" but does not prohibit manufacturers from carrying a stock of their goods in a public or private warehouse at their own expense in any section of the United States, provided that such stocks must not be warehoused with or for the account of any person, firm, or corporation dealing in or handling (as a merchant) or using (as a painter) products of the industry. Every manufacturer who has any such consignment stocks in the hands of buyers on the effective date of this code may continue the same but he shall file a detailed list of such accounts within sixty days of the effective date of this code with association headquarters and/or the office of a local paint manufacturers' association, if any such exist, where reference may be made to it at any reasonable time by interested parties. Until such time as an account as listed above is discontinued, such accounts may be similarly supplied by any manufacturer in the industry. The Paint Industry Recovery Board shall, subject to the approval of the Administrator, develop such plans as will effectuate the ultimate elimination of consignments from the industry. This article shall not apply to export trade.

Article XX

Free Deals

Except as otherwise provided herein, free deals in or connected with industry products are prohibited. "Free deals" for the purpose of this code means all forms of marketing devices, including the gift or loan of spraying or other valuable equipment, whether the full cost thereof or only a part of said cost is borne by the manufacturer, whereby the said manufacturer furnishes goods of any kind other than such of his own products as have been contracted for on his usual terms:—Provided that the term, "Free Deals," shall not apply to the furnishing of advertising accessories of small value, such as the usual circulars, color cards, window displays, display racks, and posters which accompany paint and varnish products as a description thereof, nor shall it apply to novelties of small value such as caps, yardsticks, paddles, etc.

Furthermore, the term, "Free Deals," shall not be construed to include any advertising allowance which is made for a definite service rendered and for which there is a proper accounting that is auditable as a direct charge for co-operative advertising.

Illustrative of the practices which are prohibited are included the following:—

(a) Premiums (gifts of unrelated merchandise) such as blankets, articles of furniture, etc.

(b) Prizes and awards. This does not refer to prizes and awards given within a manufacturer's own organization.

(c) Free goods (extra amounts of one's own products).

(d) Merchandising practices of the type commonly known as "One-cent sales."

(e) Free samples. But the term, "Free Deals," does not apply to samples given for test purposes; neither does it apply to trade-sale samples given for demonstration purposes, provided that no size larger than 5 pound samples of water-paint goods in dry form or 1/32 gallons of other industry products shall be so used and that such samples are plainly labeled "Samples."

(f) The sale of alcohol, turpentine, linseed oil, or any other products not manufactured by the industry at prices less than the resale market price.

Article XXI

Discontinuance of Shades and Colors

When it becomes necessary and advisable for any manufacturer to discontinue certain shades or colors in any trade-sales line, he shall give his dealer and/or jobber customers who purchase such lines six months advance notice prior to discontinuing the manufacture of such shades or colors, providing that this article shall not apply to export trade.

Article XXII

Selling Below Cost

Products of the industry shall not be sold at less than cost as herein defined:—

(1) The cost of lacquer thinners in full tankcars or tankwagons containing not less than one thousand gallon quantity, when sold and delivered to one purchaser, shall be not less than the sum total of the current market replacement price of each and every ingredient in the completed thinner.

The cost of all other products shall include the following:—

(2) The seller's total market replacement cost of raw materials (based on cost furnished monthly, or oftener if necessary, by authority of the Paint Industry Recovery Board through association headquarters, subject to approval by the Administrator); and if any raw materials are used (such as varnishes, japans, driers, etc., purchased in finished form by the seller) for which costs are not furnished monthly or oftener, as herein provided, the cost used for such item or items shall be the seller's total current delivered replacement cost.

(3) Containers and/or packages.

(4) *Cost of Processing.*—To include all direct costs (such as power and labor), depreciation figured in accordance with provisions of the Federal income tax laws, plus a proper proportion of all indirect factory expenses (excepting interest on investment), in accordance with the share each product should bear, provided that the distribution of indirect factory expense per unit of production shall be on the basis of the average rate of utilization of plant facilities of profit making producers during the years 1928 to 1932 inclusive, and provided that such average rate shall not include any plants not in operation.

(5) There shall also be included in the cost a proportion of the general and administrative expenses, such proportion to be determined and to be recommended by the Paint Industry Recovery Board to the Administrator for approval.

(6) Transportation charges when goods are sold f.o.b. destination.

In the case of any complaint by an interested party that a manufacturer is violating the above cost provisions the burden of proof of compliance shall rest upon the accused manufacturer. If the code authority or the Administrator is not satisfied by the proof furnished by the defendant manufacturer the matter is to be referred to the Federal Trade Commission who shall audit the cost accounting of the defendant and review his allocation of burden; and the report of that commission shall be final regarding the costs of the defendant manufacturer.

Article XXIII

Competitive Relations

(a) *Inducing Breach of Contract.*—No manufacturer either directly or indirectly or through his salesmen, representatives, or agents, shall encourage any purchaser of the products of the industry to disregard or fail to live up to his commitment to another member of the industry.

(b) *Disparagement of Competitors.*—The use of or participation in the publishing or the disseminating of any false statement, representation or insinuation which disparages the business of a competitor or attacks the reputation, goods, prices, credit, service, or advertising of any competitor or of any other industry, is an unfair and uneconomic practice and is prohibited.

(c) *Enticing Employees.*—Members of the industry shall recognize the right of employees to use all honorable and reasonable efforts to better their conditions, but shall refrain from directly or indirectly soliciting or bidding for the services of the employee of another member. Only when such an employee takes the initiative shall a member of the industry have the right to negotiate with him about prospective employment.

Article XXIV

Returned Goods

No member of the industry shall accept the return of merchandise from any customer without having given prior consent to the return thereof. On such goods as are accepted for return a reasonable charge shall be made and the freight charges must be charged to the shipper returning the merchandise, except in the case of defective products or where in some other way the manufacturer may be responsible.

Schedule A

Manufacturing Restrictions. — Industry products, excepting those for export trade, shall not be manufactured for the purpose of marketing them as trade sales goods in containers of sizes and types prohibited by this rule, nor shall they be produced in tints or shades to a greater number than allowed by this rule, subject to article XXI hereof, provided that paragraphs 2, 4, 5, and 6 hereof shall not apply to products commonly known as 5-, 10-, and 25-cent merchandise which is sold to the consumer at not more than 25 cents per package.

1. (a) No two-pound cans in any line, except floor wax.

(b) No three-pound cans in any line.

2. (a) No sizes less than quarter-gallon in barn and roof paint.

(b) No sizes less than gallon cans in shingle stain.

3. No half-gallon cans in the following products:—Aluminum paints, barn paints, roof paints, auto-top dressing, wagon and carriage paints and enamels, oil stains, spirit stains, and varnish stains.

4. No half-pint cans in first-grade house paints.

5. No half-pint cans in first-grade flat paints.

6. No quarter-pint cans in all house paint and flat paint.

7. No oblong or square varnish cans in sizes smaller than one-half gallon for any product, excepting shellac varnishes, carriage and automotive finishes (clear and colors), lacquers, lacquer thinners, liquid wax, liquid polish, varnish remover, bronzing liquid, japan and liquid driers, penetrating stains and spirit stains.

8. No shades or tints in excess of the following maximum numbers for each brand and/or color card:—

Interior floor paints and floor enamels	10
House paints	32
Flat wall paints	20
Enamels	18
Porch paints	8
Roof and barn paints	4
Shingle stains	14
Wagon and carriage paints or enamels	10
Oil stains	10
Varnish stains	8
Spirit and penetrating stains	14
(All the foregoing exclusive of black and white)	
Oil colors	32
(Including black, but counting the several shades of a single color as one color.)	

8. (a) The maximum number of grades for the following products shall be:—

Architectural and marine varnishes (Interior and exterior)	10
Other varnishes	28
(Including all not previously specified, such as japan driers, asphaltum, etc.)	

9. No oil colors in other than liquid measure or in other than three sizes, namely, gallons, quarts, and half-pints, with the exception of tubes, and excepting also glass jars when sold as a part of a sales unit with white base paint to be tinted with such colors in oil in glass jars to standard colors, which sales unit has been especially developed for this purpose by the manufacturer.

Manufacturing Restrictions for Kalsomine and Water Paints.—10. No shades or tints in excess of the following numbers for each color card:—

*Kalsomine (hot water)	20
*Kalsomine (cold water)	20
Water paint, interior non-washable	White only
Exterior water-mixed paints washable paste and powder form	20
Interior water-mixed paints washable paste and powder form	20
Fresco or positive, art or deep colors	20
Plastic paints	8
Cement and/or lime water mixed paint	16

11. Kalsomine (hot or cold) in the following sizes only:—Barrels weighing not less than 300 pounds net, except for the Pacific Coast, where the 280-pound barrel is authorized; kegs containing 100 pounds net weight; 25-pound net weight packages; 5-pound net weight containers.

(Existing contracts covering kalsomine in containers differing in weight content from standards covered herein shall be completed prior to December 31, 1933, provided that should a purchaser, now under contract with a manufacturer extending beyond that date, decline to accept a readjustment of his contract to bring the packages into line with these provisions, the manufacturer party to the contract shall refer the matter to the Paint Industry Recovery Board prior to December 31, 1933, for such amicable adjustments as the Board may be able to work out with the parties at interest.)

12. Interior cold water paint, powder form, nonwashable. Barrels weighing not less than 350 pounds net 25 and 100-pound containers, 5-pound net weight containers; to be made in white only.

13. Plastic or texture paints (dry), in the following sizes only:—5, 10, 25, 50, and 100-pound net weight containers and not less than 300-pound net weight barrels.

Paste form in same size containers as first-grade flat paints.

14. Patching plaster to be sold in sizes as now marketed.

15. Interior and exterior water-mixed paints, washable, in the following sizes only:—

(a) *Dry powder form.*—5-pound, 25-pound, and 100-pound containers, barrels of 300 pounds net, or more.

(b) *Paste form.*—1 quart, 1 and 5 gallon cans and 30 gallons drums.

16. Cement and/or lime bound water mixed paints in the following sizes only:—5 and 10-pound containers, 50 and 100-pound containers, barrels of 300 pounds net, or more.

17. Fresco colors (positive, deep, or art colors) to be packed in the following sizes only:—

(a) *Powder form.*—1-pound cartons or cans, 25 and 100-pound containers, barrels of 300 pounds net or more.

(b) *Paste form.*—To be packed in ½ pint, quart, and 1 gallon cans only.

18. Dry sizes, water-mixed. To be packed in the following sizes only:—1-pound cartons, 100-pound containers, and 300-pound net barrels, or more.

* Means material commonly known and described by this term.

Tribute to Mr. Trigg

H. M. Howard: If it is in order at this time, I think we should take some recognition of the men who have given their time to this work. They have done our job without compensation, on their own time, with a great deal of worry, and a lot of questions from us that might have appeared as though we put them in the position where they were the ones that were responsible for not doing what we wanted. I think their help and their attitude of trying to help us has been splendid, and I propose a vote of thanks to Mr. Trigg and the rest of his committee at this time.

(Mr. Kurfees assumed the chair.)

F. L. Sulzberger: It seems to me that it is only fair to the men in this room who heard this code described this afternoon to appreciate what that code represents in the way of effort, time, attention, and devotion to it, as was given to it by Mr. Trigg.

I happen to have been on the code committee, and the members of the code committee, besides myself, did quite a lot of work. But from the time that the national recovery act was passed, right up to the present time, Mr. Trigg has devoted himself not only in time but in money, attention, personal inconvenience to the development of this code by traveling around the country.

During that period, he practically neglected his own business, because he couldn't be in two places at the same time and attend to two jobs at once. I don't think that at any time in any trade association such unselfish sacrifice has been made for the benefit of a whole organization, and I think the thing should be recorded and understood by the men in this room.

I think it was because of the remarkable job that Mr. Trigg did in this connection that the nominating committee (and I was not one of them) must have insisted on drafting him to the job for which he has been nominated, President of this association. It must have taken a good deal of thought. It must have been a hard decision for Mr. Trigg to have made, to sever his connection with the paint business in an active way, to get out of the paint business in order to lead this association. I think that a good many of us men would have hesitated to make the decision that he did. I think that all of us should appreciate how fortunate we have been to be able to get the benefit of his leadership continuing on through the association after we know what he has been able to do in this code work.

It would have been a revelation to any of you men to have participated in those meetings in Washington, and to have seen the grasp of the entire situation which he had, and the leadership which he gave those of us who were doing our feeble, level best to help him to get the code through.

(The audience arose and applauded.)

Mr. Peter's Commendation

E. V. Peters: I should like to be one of the seconders of the motion which Mr. Howard has just placed before the convention.

I want to add a few things to those which Mr. Sulzberger has just given you, which I am able to do from a slightly detached angle, and as industrial adviser to the administration in the consideration of this code.

You had a little sample this afternoon (Mr. Trigg's presentation of the code to you) of the discussion which the consideration of such a document can bring about, and this discussion has all been within the industry. But if you will transplant such a proceeding as we have had this afternoon to Washington, where the questions and the thoughts which are interjected into this thing come from different sources; not from the industry, but from various boards, who have a great many ideas, and Mr. Trigg has been the man who has had to stand up and answer questions, make explanations. He was the master salesman of the industry in presenting this code to the government. I think, had it not been for his constant patience, under conditions that were exceedingly trying, the code never would have been today on the President's desk in the White House. It is only a month since the public hearing.

Not only Mr. Trigg, but the entire membership of your code committee, in presenting your code to the government, made as favorable an impression upon the national recovery administration as the committee of any other industry. I know, Mr. Trigg, and the other members of your committee, from my talks with General Williams and the other officials of the NRA, that your committee has left an exceedingly favorable impression with them.

I am going to steal Mr. Monypenny's thunder for a minute. He was telling me about a company in England, an armament manufacturer, who visited this country, and Mr. Monypenny said to him, "Do you have many problems in your business in England?"

"Well," he said, "we only have two."

Mr. Monypenny said, "What are they?"

"Well," he said, "one of our problems is to produce an armor plate that no projectile can penetrate; and the other problem is to produce a projectile that will penetrate any armor plate."

This committee has appeared in Washington. Sessions have begun (I don't mean the public hearing but subsequent sessions) at ten in the morning, and adjourned at one and two o'clock the following morning.

During all that time the chairman of your code committee, through the exercise of almost unbelievable patience and powers of persuasion has advanced this industry, has imposed laws of this industry until today I believe it merely awaits the signature of the President to become the laws of your industry.

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As I said before, had it not been for the great leadership which you have had, I think you would have been some months in having attained a final answer, and then one not nearly as favorable to your future business as you have now. I am glad to second Mr. Howard's motion.

Mr. Matlack: As a small manufacturer, I wish to add to what Mr. Peters has said, that Mr. Trigg has fought for us as small manufacturers, has looked out for our interests and has given himself as much to us as he has to his own companies and to where he belongs. He has unselfishly gone against, time and time again, questions that would undoubtedly have benefited the large companies more than the small, to hold up for companies such as ours, and smaller.

I can only say in addition, that living in the same town, being very closely with Mr. Trigg, that all that has been said today doesn't half express the time and the interest which he has given for the code, to put it through in the shape that it is, and the care that he has taken that no one shall suffer under this code.

Mr. Kurfees: I am quite sure that I haven't put a question during this session, or during this convention that gives me more pleasure than to ask for a vote on this motion and the second that has been made to it. Most assuredly we are indebted to Mr. Trigg for what he has done, and I am quite sure that it is a pleasure to every member of this audience to give him a rising vote of thanks for the splendid work that he has done for all of us. I will ask you to please rise.

(The audience arose and applauded.)

Mr. Kurfees: Mr. Matlack has a few remarks before we adjourn.

Large Registration

Mr. Matlack: I thought you would probably be interested to know the wonderful attendance that we have at this convention. There are over 457 names registered at the desk outside, from registration. We have over 600 at the main desk in the hall. The registrations outside do not take care of the ladies. They do take care of the Chicago members who are in attendance. But the desk outside has very few Chicago people.

I wish to take the opportunity of thanking you who have come so far, and also to realize the kind of meetings that we are going to have tomorrow, and be sure to attend wherever possible.

Mr. Kurfees: If there is no further business I will just announce that our meeting begins tomorrow morning promptly at nine-thirty.

(The meeting adjourned at 4:55 p.m.)

Wednesday, November 1

Concluding Session, Wednesday Afternoon

At a brief business session Wednesday afternoon, November 1, the officers and members of the executive committee who had been nominated the day before were formally elected and installed.

H. M. Howard, in formally seconding the nomination of Mr. Trigg for the presidency, spoke of the confidence which all of the small manufacturers of the country had in the code of fair competition and in the man who was chairman of the committee that drafted it. Mr. Trigg, in a brief speech of acceptance and appreciation, called on the individuals who formed the association to give them their full co-operation. He would proceed, he declared, in accordance with the mandate given him by the ballot and he would expect any man who was under any misapprehension concerning the conduct of the association, or any one who had definite complaint or criticism, to come directly to him for clarification or explanation.

A number of formal resolutions were put through carrying over honorary members of the old associations to similar status in the new, and then the meeting was adjourned.

The Two Division Sales Conferences

In planning for the set-up of the new National Paint, Varnish and Lacquer Association, the amalgamation committee endeavored to catalog the deficiencies of the old organizations and to remedy them where possible. Strong feeling was revealed that neither association, either in its headquarters facilities or in its convention activities, provided means for full and free discussion of industrial sales and trade sales problems. Accordingly, the new constitution provides for two special committees to deal with these subjects. The committees are to be composed of specialists in all parts of the country, with an active expert at the head of each and secretaries in the Washington headquarters devoting their time to the committees' affairs.

To launch this new and, in the opinion of all, highly important undertaking, a special place on the program was assigned for an industrial sales conference Wednesday forenoon, November 1, while a trade sales conference was scheduled for the same day in the afternoon.

Each conference consisted of presentation of prepared papers and a confidential exchange of frank opinion by those in attendance.

Industrial Sales Conference

Wednesday Forenoon, November 1

The industrial sales conference, sponsored by the two old associations, was under the chairmanship of Joseph R. Esposito, president of Ault & Wiborg, who first called on Ernest T. Trigg, later in the day to be elected president of the National Paint, Varnish and Lacquer Association. Mr. Trigg spoke briefly on the importance of the exchange of such information as would be obtained through such conferences and through functioning of the national industrial sales committee. Charles J. Rob explained how this committee would operate, and the meeting was then given over to presentation of the following addresses:

New Era in Industrial Sales

First on the program was a paper under this title by Mr. Esposito, who reviewed the evils which he felt constituted a menace to the industrial finishing field:—

You have heard Mr. Trigg and what he has said to you gentlemen, is all true. I want to add that I seem to have talked myself (rather unconsciously), into this job of chairman and in consequence. I have the rare privilege of addressing you today on this *all-important* subject, so ably introduced by Mr. Trigg, and on which I shall attempt, in my own way, to dwell more in detail.

Instead of delivering my message in an extemporaneous manner, I have prepared a paper to save time and enable all of those present, to grasp the importance and necessity for the formation of the industrial finishes group of the National Paint, Varnish and Lacquer Association.

With all the organizing and counter-organizing that has been going on in the last few months, it seems that every industry and branch of industry, has its own particular association. In the protective coating manufacturing field, we have several brand new groups, some local in character and others based on the type of product. However, there is one underlying classification which has not hitherto been definitely recognized but which, if made the basis of a comprehensive grouping of the whole industry, should make many of the smaller subdivisions unnecessary. This would be a separation based not on type of product, but on the class of trade to which it is sold and the methods of carrying on business, i. e., on the one hand, trade sales, involving house paints, architectural or shelf goods, etc., and on the other, industrial sales where goods are made to meet requirements of manufacturing consumers.

Trade sales involve standardized formula made in quantity, but packed in relatively small containers and distributed through wholesale and retail organizations with abundant and expensive advertising. Industrial sales are of varied types of materials usually made in smaller quantities, but sold direct to the user in larger containers and with relatively modest advertising outlays. The number of manufacturers in this latter group, is small when compared with the so-called paint makers and with the introduction of the numerous modern synthetic materials, their interests and problems have become more and more unified. The old distinction between pyroxylin lacquers only and those of varnishes and enamels only, has already almost entirely disappeared—they all go (to at least some extent), outside of what they once zealously guarded as their own field.

Divisions of Interest

When the paint and varnish manufacturers associations were organized, there were but comparatively few concerns in the strictly industrial line. Lacquer was a distinct field; varnishes and enamels, another, etc. The associations were built around the trade sales idea and regardless of the steady growth of users of industrial finishes, only scant attention was paid to the requirements of this class of trade by the associations to the present day. The membership of the association is composed of a large number of varnish and enamel manufacturers who also make lacquer, but few, if any, out-and-out lacquer people—a situation which is not at all surprising in spite of the efforts of the association to bring these stray lambs into the fold where they felt they would be an unhappy minority. Several of the men in the upper councils of the associations have of late become convinced that the creation within its affiliations of two distinct groups—one for industrial finishes manufacturers and one for trade sales—will give the former the standing and the voice in decisions to which they are entitled. They must have the new quasi-governmental status that the association is required to assume.

The bringing of all the various subgroups of specialty makers into one large vigorous battalion, will make for strength and simplicity and will enable it to gain advantages for its members which would be impossible to numerous smaller bands.

Under the NRA code, the formation of this new body will eliminate the possibility of certain establishments in which different types of industrial products are turned out, having to conform to conflicting regulations set in accordance with the demands of these various smaller groups. At the association meetings held here during the past few days, this plan has been discussed and now calls for action. It is hoped that whatever minor obstacles may be found to stand in the way of taking such a step, will be easily overcome.

Neglect of Industrials

Quite severely and unsparingly, have I criticized the officers of the associations for their seeming negligence of industrial finishes manufacturers. Meeting upon meeting which I have attended the past quarter of a century, whether Chicago, Atlantic City, or Squeedunk, was confined to trade sales, paints, putty, kalsomine, brushes, the size of a container, simplification of color, unfair competition, clean-up and paint-up campaign, but hardly a word of note was spoken of the vital problems of the industrial sales as such. In the forty years or more of the existence of the National Paint, Oil and Varnish Association, I *again* repeat that little or no thought or consideration, has been given to manufacturers of industrial products—thrown and left in oblivion and there to remain until I gave birth to this idea a few months ago.

Because of my activities to bring about a separate industrial finishes group, you are assembled here today in the hope of welding together a *strong* and *powerful* inter-organization of the National Paint, Varnish and Lacquer Association, capable of functioning for itself and by itself, managed and supported by competent heads of industrial finishes manufacturers, whether they be in that field exclusively or part and parcel of a trade sales outfit.

Let us now analyze the practical debacle of industrial finishes business at the present day—its causes and whatnots. I stepped into this game some twenty-six years ago, an unknown and mediocre salesman, without knowledge of the vicissitudes and ramifications of the manufacture of industrial finishes and their use or application. In those early days, a paint manufacturer was a paint manufacturer—he dabbled not in the varnish and enamel fields, but came the day when the devil inspired him to enter this field; thus unmindful and practically ignorant of the problems and difficulties daily encountered in this high-specialized profession—extensive and expensive laboratory and research work involved—to plan, create, service and invent a certain finish for a definite purpose—he went out into the world to conquer. The paint salesman sold varnishes and enamels at the price of cheap paint; from then on began the destruction of the once dignified and profitable varnish business.

What Happened to Lacquer

We now come to the lacquer manufacturer who ran his own show for fifty years or more, but just as soon as automotive lacquer enamels came into being, every paint manufacturer, every varnish manufacturer and innumerable chemical and solvent companies stepped into the picture and down went the price of lacquers almost to the level of cheap paints and varnishes—the debauchery was complete. I might at this point, refer you to an interesting article by Paul Kennedy, in the convention issue of the American Paint Journal which I am going to ask the secretary to read later, for the benefit of those who have not read it. It has a distinct bearing on this situation.

In sponsoring an industrial finishes institute or group as part of the national association, I do not anticipate the necessity of jumping hurdles—there will be none, if each and every individual and concern in the field will stand with a united front and whole-heartedly support the principles and policies of this new body. The total consumption of paints, varnishes, enamels and lacquers in 1929, according to statistics of the Department of Commerce, was about $375,000,000.00, which figures are based on 1,063 establishments in the industry reporting to them, and composed of the following:—

Paint	$178,242,000
Varnish	71,889,000
Varnish stains	4,381,000
Lacquer	57,734,000
Lacquer thinners	19,152,000
Enamels	40,199,000
Total	$371,597,000
All other products, including white lead, putty, linseed oil, etc., amounted to	197,379,000
Total sales for 1929	$568,976,000

I estimate roughly that $150,000,000.00 (40 per cent) of the varnishes, varnish stains, lacquers, lacquer thinners, and enamels shown in the above table represent industrial finishes sales.

Not less than 50 per cent of the manufacturers in our entire industry make, sell or offer for sale, industrial finishing products. Is not the amount involved large enough and the number of manufacturers sufficient to warrant a separate self-supporting group or institution to police its own field and maintain a policy all its own for the benefit and education of its members?

New York Organization History

A meeting of a certain number of industrial products manufacturers was held at my New York office on Tuesday, October 3, over which I presided and which the following attended:—Clifford Armitage, John L. Armitage & Co.; C. R. Cook, Cook Paint & Varnish Co.; O. J. S. deBrun, Egyptian Lacquer Manufacturing Co.; A. C. Horn, A. C. Horn Co.; Mr. Moosman, E. I. duPont de Nemours & Co., Inc.; William Zintl, E. I. duPont de Nemours & Co., Inc.; Leon Richards, The Zapon Company; Mr. Robson, Standard Varnish Works; C. J. Roh, Murphy Varnish Co.; Ernest T. Trigg, John Lucas & Co., Inc.; H. E. Webster, Pratt & Lambert, Inc.; J. R. Esposito, chairman, Ault & Wiborg Corporation, and Robert K. Shannon, secretary.

These gentlemen were invited as my guests for the purpose of discussing this plan and obtaining the different points of view and acquiescence to the plan proposed. All were in accord with it in effect and purpose, which was most gratifying.

I am wholly unfamiliar with the problems of unfair competition in trade sales. I am acquainted with a few of their unfair practices only by reading and hearing about them, but I do know, from actual experience and contact, the evils existing in the industrial sales field. Aside from the commercial bribery rampant prior to 1917, which still continues (we hope to an appreciably lesser extent), we have other forms of unfair business dealings which to my mind, are almost as bad. Monetary gratuities are not now recognized or permitted by reputable and responsible institutions; salesmen and agents commit such acts without the cognizance of their employer, though some must know about it and obviously ignore it because it seems to fit in with their scheme of things. The worst of these, to my way of thinking, is the giving away of equipment by the companies themselves—not the agents or salesmen necessarily—donating without charge, or lending without fee, graining plates, spraying machines and other items—offering to withdraw competitor's enamel from a dipping tank and replenishing same with fresh material of their own make with full allowance for the material withdrawn. I may also mention, unreasonably long credit terms, 5 percent discount in which some concerns still indulge, guarantees of performance, payment of unjustified claims, rebates and finally to promote sales, the most outrageous forms of reciprocity that have ever been attempted in the history of our industry. Still another bad practice is financing a prospect whether the money is needed or not by that customer in order to acquire his business to the exclusion of a worthy and legitimate competitor, who may not be in a position to do any financing or if able to do so, has no desire for a deal of that kind.

Joseph R. Esposito
Chairman on Industrial Sales

Evils Can Be Corrected

Admittedly, monetary gratuities may be difficult to control by even a most conscientious manufacturer, but I am convinced that this practice, together with all of those other practices mentioned, can be controlled and brought distinctly within the realm of correction of the manufacturer if he so desires. Prices at which the products have been sold during the past four years especially, and are still being sold and offered for sale, prove that the industry is in a convulsive state, born of unbusinesslike methods of several manufacturers who have indulged in an unreasonable desire to get business without regard to the effect upon competitors or without regard to cost.

There is another very vital situation

which should be cleared up by our industry and that is, the indiscriminate distribution of cost information and formulae for the manufacture of varnishes, enamels and lacquers, which is being made by almost all raw material manufacturers. This practice, as well as the offering of technical service to those other than legitimate manufacturers is infinitely detrimental to our industry. It has brought into use products manufactured without correct technical control and frequently basically unsound. Most serious of all, is the fact that it puts the actual consumer in the varnish and lacquer business. He proud, if not drunk with success in producing his own finishing materials, ventures into the market. At once is born another competitor.

I propose, therefore, that this group register its objection and resentment of these practices in no uncertain terms to the raw material manufacturers and make a forceful attempt to discourage their present policies of selling or soliciting business from consumers. Refrain also, from disseminating information of any character concerning the art and science of the game which rightfully belongs to the recognized manufacturer.

These are serious questions which we must discuss here today. All of these evils which have just been mentioned are not only practiced, but countenanced by a vast number of concerns in our industry. I hope that many of you will voice your sentiments, freely and frankly. I think that we all stand on a common ground and in this message I have endeavored to cover only the high spots of the ugly picture. The case is now in your hands for final disposition and in closing I hope that all of you in the industrial finishes game, will join the group with a whole heart and full co-operation. If you gentlemen allow things to remain as they are, and do nothing about it, there is an impending tragedy ahead which I hate even to contemplate. Subscribe to this project, support the group, conform with the policies and regulations that will be laid out later, if not today, and you will not only avoid this tragedy, but place your business on a sound and sensible basis.

Profits in Industrial Sales

This subject was discussed by A. C. Horn, of the A. C. Horn Company, Long Island City, N. Y., who took up the questions of small batch manufacturing, credit hazards and costs of making sales:—

I have been asked to introduce as the subject for discussion the question of profits in the field of industrial finishes.

By profits I understand a reasonable return on our investments and our efforts. I am afraid that you will all have to agree with me that under this definition we have a question to deal with rather than a subject.

Obviously, if such profits existed there would be no need for raising this question at this meeting. It is my hope that a few introductory remarks may lead to a valuable discussion; which, in turn, will give rise to some plan of action, because it is action that we need, rather than talk.

Any discussion of profits can be divided into two distinctive parts. Is the industry in which we are engaged a profitable one—and are those profits distributed in fair measure among us.

In the light of the second question we meet as friendly competitors, each striving to secure his fair share, or more if possible. In the light of the first (is the industry in which we are engaged a profitable one) there can be no issue of competition. Each of us represents an investment of money and effort in that industry, and each of us is vitally concerned in asking himself whether this investment has been a wise one. We meet as shareholders in a common concern, and under present conditions the facts which we have to consider are anything but comforting.

The issue is:—How can we put the industry back on an income producing basis. And this issue requires the utmost measure of co-operation.

In order to solve our problem some sort of analysis of the various aspects of profit in our field is essential. Frankly, this should be the task of specially equipped committees, since the work involved is considerable and the authority and machinery for the gathering of material is essential.

Perhaps, if we are able to point out the fields in which such committees might prove of value, we will have accomplished enough for the day. It is toward this end that I have prepared a rough outline, in which I have tried to emphasize points of approach rather than bring you any hastily formed conclusions.

Three Chief Problems

I believe that our course of action can be most easily directed into three distinct channels. These three proposed fields of action are by no means of equal importance. However, each of them is worthy of consideration; and it may be that we will come to believe that some or all of them deserve active attention. Accordingly, I enumerate, not in their order of importance, but in their order of presentation, three aspects of our industry that will bear close inspection and analysis.

1. Losses sustained in small batch manufacture.
2. Lack of profits due to credit hazards.
3. Cost of making sales.

Small Batch Manufacture

The first field for consideration, where it seems to me we could profitably invest a little time and mutual effort, would be the question of what I have called "small batch manufacture," with particular reference to special shades.

I think you will all agree with me that one of our production problems is the vast and growing range of special products and special colors which we are called upon to supply. This entails time-consuming matching, the running of innumerable small batches, usually first in the laboratory, then in the plant, itself, on which it is impossible to make a profit. These small batches result, besides, in general confusion to production schedules.

In this matching of special tints or shades there is also to be considered the fact of the impossibility of keeping the batch quantity within the exact requirements of the order, so that there is always a surplus which becomes useless the customer reorders within a short period of time. These surpluses must be sold as mill ends, resulting, generally, in a loss on the particular order which produced the surplus.

Toward remedying this difficulty—and I believe we all suffer alike in this respect—we might consider the establishment of standard colors and shades by each manufacturer, let us say a definite and agreed number of shades of each color. We could then agree upon a uniform surcharge to be applied to all orders under 50 or 100 gallons calling for a shade not among these standards. This surcharge would increase in opposite ratio to the number of gallons required, so that the smaller the quantity the greater would be the surcharge.

It will be conceded that no matter how much we charge, the transaction taken by itself must be unprofitable; but since it is necessary to preserve "good will" with those of our customers who buy other products there is no way of eliminating these special batches.

Such a policy as described, if adopted by all manufacturers, would result in quantity, and therefor cheaper production of those colors which would be considered standard. It would encourage the customer, wherever possible, to adopt those shades, and it would educate him to understand the difficulties of the special match so that he will be sympathetic with our problem. It would be hard to exaggerate the benefits that such rationalization of production would bring to our industry.

A Difficult Small Order

Merely as a typical instance or illustration of the kind of thing I refer to, I cite an experience of our own company:—A manufacturer whose total account in 1928, which was his most prosperous year, amounted to $4,000, makes and sells bathroom accessories in an assortment of standard colors. His customers are largely the department stores.

During the past few years these department stores have had stylists survey their merchandise, and under the pressure of these stylists the manufacturer has had demands for color combinations other than his standards. A typical procedure is this:—The stylist of a department store will want a fixture, which ordinarily the manufacturer supplies in green, to have the body in green and the trim in a special color. The department store, because it buys from hand to mouth, purchases only a few of these fixtures finished in the required combination, which obliges the manufacturer to requisition the special trim color only on the receipt of each order.

Not infrequently, in this particular case, the stylist supplied a color chip, and this color chip was passed on to us with a request that we send the manufacturer one or two gallons of the shade called for.

Since fashion and department store personnel are subject to change, it was impossible for us to look forward to a reorder of these off-standard colors, and we soon found ourselves obliged to make small batches to supply the wants of our customers.

Simple arithmetic would have suggested the policy of refusing to supply these specials, except at prices that would compensate us for the extra cost involved; but this would immediately cause a transfer of the account to one of our competitors. In fact, our company took exactly that attitude, with the result that one of the largest manufacturers in the industry acquired a new account. Based on our experience, we are not optimistic enough to believe that our competitor has found it any more profitable than we did.

It is difficult to reconcile oneself to this type of mutual loss, when by the simple expedient of co-operation on the part of all the manufacturers in our industry it could be avoided.

Lack of Profits Due to Credit Hazards

Leaving behind us this special production problem of our industry, we find ourselves confronted with the question of credits, and the claims that not infrequently follow when credit has reached the exhaustion point and insistence on payment is made.

Because of the wide differences in conditions of the various industries we serve, it is not an easy task to set hard and fast terms or credit rules. Certain industries have suffered more from the depression than others. The conditions in the several industries are basicly different, as judged by the terms which they, themselves, must offer, and consideration must be given to the circumstances surrounding each industry.

However, I am not satisfied that within these limitations we cannot agree on some kind of uniform terms and credit practice. As matters stand today, there is absolutely no relationship between prices in certain fields and the credit risks involved. And such a corrolation between prices and risks must wait upon some descriptive standard credit practice adopted toward the various industries.

Toward this end, I would suggest the establishment of a bureau of uniform credit practice. This bureau would also serve to disseminate and interchange ledger credit information. A splendid example of the benefits to be obtained can be found in the Paint & Allied Industries Credit Association of New York, which has been characterized as one of the most efficient and best organized credit groups known to national credit association officials.

Such local paint credit associations, however, since they are interested chiefly in the dealer trade, do not include those very houses which have no trade sales and who specialize in industrial finishes. This leaves us without active organization of any kind, and in certain fields it is hard to know how we have managed without them.

The details of the actual organization of such bureaus with a central bureau to determine upon forms of uniform credit practice, can be left to a committee, and that committee be entrusted with its development. That such a bureau should be formed is, I believe, highly desirable. We have much to gain from it—particularly in arriving at a corrolation between credit risk and profit.

It cannot be denied that collection of accounts would be facilitated if the delinquent debtor knew that all manufacturers of industrial finishes were banded together for their mutual protection. As the matter stands today, as soon as one manufacturer refuses to extend further credit, the business is offered to another who cheerfully accepts it.

In some cases, complaints are known to have been registered, provoking counter claims asserting contingent liability; and since litigation, particularly that involving payments for damages, is costly, settlement is made rather than risk suit in a foreign state before local and hostile juries.

This describes another method, designed for the purpose of relieving the manufacturer of his reasonable profit, since the percentage of loss has increased beyond normal credit extension expectancy.

I am restrained from giving you a concrete example of this kind of activity by the thought that while it might serve as an illustration for us, it might also act as an inspiration for others.

Cost of Making Sales

And now we approach the concluding and the most formidable aspect of our problem, namely, the cost of making sales.

To put it bluntly, I wonder how many of us are satisfied with the appalling leakage of profit into sales cost.

Isn't it time to ask ourselves how much an expensive selling apparatus really contributes to the average sale in the present market. Let us face the facts—under the

Charles R. Cook

stress of keen competition in his own field, the purchaser has become, or is rapidly becoming entirely impartial in his choice of houses of supply. Price and value and the security of his own position have become the dominating factors in his choice. It is the impartial purchaser, who by taking advantage of conditions in our industry and placing his orders shrewdly, has brought our price levels down to their present depressed position. Under these circumstances, are we justified in maintaining the high cost of making sales which has become a tradition in our business.

Could we not, for example, by some concerted action bring about a uniform compensation for our salesmen, permitting them to earn a decent livelihood by allowing the company for which they sell to earn a reasonable profit. Are the expensive entertainments, which we have discouraged as a group but which continue to be dispensed if the stories which come to us are to be given credence, absolutely necessary.

Then there is the matter of servicing, an item that can run into the thousands of dollars which cannot be separated from our selling cost.

Our industry has been called upon to assume, and has perhaps carelessly assumed responsibility for the final results in the complex processes of industrial finishing, over many factors of which we are without control. For example, the failure of an interior finish of a metal container for foodstuffs, or pharmaceuticals, may be due to the metal itself, dirt or grease, imperfect dies, poor lubrication or inaccurate baking cycles. There may be six or a dozen possible contributing factors to such a failure. Yet it is not the supplier of the metal who is sent for, or of the dies and machinery, or the maker of the baking equipment—it is invariably the manufacturer of the finishing materials. It is because we can be depended on to locate the difficulty, if it is only to prove that it is not our product that is basicly at fault. In short, we are guilty until proven innocent.

The maintenance of a staff competent to act as consultants in these industries is a heavy burden for those who are willing to shoulder it, although such enthusiasm for responsibility weakens as one sees the customer after having availed himself of this service for the adjustment of his plant, shopping around for a material from a concern that can match the previously abused one at a lower price because they maintain no such staff.

This example can be multiplied by the problems furnished by every one of the industries we serve. Their number is sufficiently large to insure the necessity of expert service men to locate the various kinds of difficulty, which in the greater percentages of instances is found to be elsewhere than in the finishing material.

Then again we have the service men who are called upon to color design furniture—teach the customer's employees, who ought to know, how to use our products. I have heard of instances where such service men, as they are called, have been obliged to remain in finishing shop for over a month, practically running a school house in design and finishing.

A statistician once made the remark that the paint industry was a yardstick by which to measure the volume of business of our total industries.

Variety of Problems

The significance of this statement is appreciated by the manufacturer of industrial finishes, since his diversification is secured by one hundred to one hundred and fifty industries, varying from the manufacture of an eyelet to the production of a locomotive, from rubber shoes to coatings for the protection of food products. We are taxed with chemical, mechanical and engineering problems.

Individual firms may become specialists in one or more fields of endeavor, but in the main, men must be equipped with complex knowledge of operation, flow sheet, and finishing equivalent to that of the superintendent within the plant itself.

Such a variety of knowledge calls for trained men, and skill and judgment must be sufficiently rewarded.

But how are we to maintain such staffs of skilled men, and the expensive instruments with which they work, if the profits on the materials sold do not justify it. How are such service equipments to survive, if in the last analysis the business goes to the firm with the cheapest price.

Isn't this and other questions raised worthy of further study. I, for one, would look forward with a great deal of interest to a report from a committee that had made it its business to study thoroughly these problems of the high cost of selling.

Before closing I would like to repeat what I said at the beginning. Our industry is in an unfortunate condition; our capital and our energies are engaged in an enterprise which does not yield us an adequate return. What are we going to do about it. I have done more than my share of talking. Let us hope that the rest of you will show better judgment and resolve, instead, on some course of action.

Competition from Raw Materials Suppliers

Charles R. Cook, of the Cook Paint & Varnish Company, Kansas City, gave a brief paper on this subject:—

The welfare of our friends—the raw materials manufacturers—is so closely linked with ours, that it is inconceivable that they should even tolerate their technical men posting our customers on how they can make the finishes which we are supplying.

Yet this very thing is going on every day!

The net effect is no more tonnage for the raw material manufacturer— he has lost our co-operation and good-will—and, has taken a customer who will need, and demand, a lot of continued, experienced technical help.

Our customer painfully realizes the essential item of overhead in his own business—but, when the raw material manufacturer shows him how cheaply he can make his own coating, or varnish, or lacquer, or thinner, or "what-not"—he only looks at the raw material cost, comparing it with the naturally much higher price which we have been charging (to cover *our* overhead, and hopes of a final net profit after all service costs, claims and adjustments) and right away feels he's been robbed.

To retain, or regain our customer, we first have to prove we have been friendly and fair—and, then probably end up by our taking on the business on "overhead basis"— which means no profits and a skeptical customer.

The manufacturer of industrial finishes realizes all too well that we have our hands full, trying to supply our customers with the newest, improved type finishes—to do this requires continual experimentation and research; we need the help of our friends, the raw materials manufacturers, in keeping us posted as to their latest, improved raw materials—but, they should keep away from our customers, and carefully refrain from printing or disseminating in any way technical data and formula which could fall in the hands of our customers.

For to keep in business we must be allowed to make money—we are entitled to a fair profit for our services.

Cost of Developing and Servicing and Their Abuses

O. J. S. deBrun, of the Egyptian Lacquer Manufacturing Company, New York, who becomes a member of the new national executive committee representing lacquer interests, gave a paper on the above subject:—

If development and servicing in our industry are costly and capable of abuse by the trade can they not be eliminated? It may be possible to reduce the cost and partially eliminate existing abuses of servicing by provision of law such as all approved NRA codes become or by voluntary co-operation of manufacturers. The cost of development or, to use another word, research, however, will always be with us, because we are in a sense engaged in a chemical industry and when we eliminate research in a chemical industry we sooner or later cease to be. We can all think of companies who have passed into history by reason of doing too little research or development work to keep up with t he ever-changing procession, and we are all mindful of companies nationally outstanding in size and influence whose success largely resulted from chemical research and development. The vision, courage and financial ability to establish and maintain laboratories staffed with chemists and other technical men of talent and at costs not inconquential have brought their rewards. For our particular industry, and assuming a sufficiently intelligent management capable of making a proper evaluation and

use of research findings, I hazard the guess that a company will grow in direct ratio to what it spends in development work. To a chemical industry such as ours, research and development is much more important than most other items of cost, such as, for instance, advertising, on which so much is generally spent. No other expenditure is capable of returning larger dividends.

We are, of course, all more or less familar with what is properly included in these two words, 'development' and 'servicing'.

Initially, we start out with a seemingly large and unprofitable investment in laboratores supplied with equipment and material which never seems to be quite adequate but must be continuously added to, and manned by a staff of men who month by month receive their pay checks, results or not. Suggestions for their research work originate from their employers, from the company's salesmen, from their customer and trade contacts, from literature, from raw material suppliers, from analysis of competitors' material, from discoveries in the course of their own work, and in other innumerable ways.

Search for Development

We search for new raw materials, new methods, and new processes. We seek a product to meet the special requirements of a prospective customer to withstand certain tests. These tests may be one or several, often not possible of achievement or practical and often a great deal of work and money is spent in vain. Another instance when the expenditure of time and money may have been futile occurs when the customer's need vanishes while time is being spent in working out his problem. At other times the research staff must study the prospective customer's raw material product and process and make suggestions to him how to prepare his own product before applicaton of the finish desired or suggested to him. Frequently there is modification after modification. Always in our work is there the attempt to approximate the customer's manufacturing or production conditions.

It all takes equipment, it takes supplies, it takes men, it takes time, it costs money, but it is essential.

We are likewise familiar with the high cost of servicing. Distant trips to the customer's factory by technical men to diagnose trouble or make suggestions for improvement in product or production are daily occurrences. Another form of servicing is that of demonstrations of application by experienced practical men.

Abuses there are many. A prospective customer misleads us in the volume which will result from ability to work out a finish for him, and a great deal of time and money is devoted to satisfy him with a product of which he purchases so small an amount, that the small profit on the same is totally inadequate to compensate us for our expenditures. Mr. Purchasing Agent gives a sample of a difficult special formula that we have worked out for him at considerable expense, to a competitor, or two, to analyze and duplicate at lower price to him. We have all sent our technical men or demonstrators hundreds of miles on a hurry-up complaint to find our perfectly good material being blamed for a failure in finish, clearly attributable to the customer's misapplication or other local conditious obviously beyond our control. And, who hasn't met the customer who wants us to finish his selling samples gratis?

The cost and abuses of development and servicing cannot be entirely eliminated. But, we can do something about them. We can charge for them.

Situations Have Changed

Until ten to fifteen years ago there were in this country not more than a half-dozen well-known lacquer manufacturers. They were all conscious of the fact that they were in a sense chemical manufacturers and they all realized the necessity for taking into consideration all elements of cost in establishing selling prices, and they made such prices as permitted a fair and reasonable return on their investment of capital and time. When after the world war research in the meantime had produced a plenteous supply of solvents at reasonable prices, and research had produced ever lower and lower viscosity nitrocellulose permitting of an almost undreamed of increased use of lacquer, and research again resulted in relegating to the scrap heap the old-fashioned method of painting automobiles for the speedier and more durable lacquering of cars, the vast paint and varnish army rushed headlong into this industry of lacquer manufacturing. In this hurried entre, they were either unacquainted with or deliberately ignored the nature of the manufacture, the cost of development and servicing of this business when they came to fix their selling prices. They sold an extraordinary produmt of high manufacturing and servicing cost at a price often the same or less, gallon for gallon, as that of the more cheaply made and distributed paint or varnish product with which they were acquainted.

Years have gone by and conditions have become progressively worse. They have been completely disastrous years for some, sad years for others, and have brought scant cheer to few.

Mr. Trigg, in his presentation of our proposed paint industry code at Washington, put it mildly when he said, with reference to profits in our industry during the past few years, "An investigation would undoubtedly show that the majority of manufacturers sustained a loss." And let us not be misled by the publication of meager profits lately announced by some of the larger companies, for remember some of them manufacture many lines foreign to our particular specialties and some of their lines, and, note especially, they are generally those of new origin resulting from the onward trend of their development or research work, are highly profitable and may possibly screen losses sustained in their industrial finishes departments.

Research Is Expensive

We are chemical manufacturers, in a sense, using expensive equipment with high rates of depreciation and obsolescence, and must necessarily maintain expensive development and research work and give an extraordinary amount of expensive service. That this development work must continue is evident to George B. Heckel when in his article on "A Century of Progress in the Paint Industry" and referring to lacquers and synthetics, he says, "Gardner, in his recent circular, lists and catalogues the properties of 130 solvents and diluents, 157 resins and 29 plasticisers; and the list was out of date almost before it was off the press." The list out of date before the ink was dry can only mean that to keep up, to remain in business, we must continue intensive development work. But can we afford to continue such development work without charging for it, without considering it in our costs?

To say some are not doing this and have been and are giving away extraordinary products at even less than ordinary prices is stating a fact which we all know. To illustrate, a thinner is offered at 42 cents in drums, and a good, clear lacquer is offered at 95 cents in 5-gallon cans. By whom? By leaders of the industry. Then, I think of a customer, only a fair-sized consumer, who had been paying $2.65, a cheap enough price, for a very excellent grade of clear lacquer which had to stand much abuse.

I my files is the original letter of one of the very largest companies represented in this association addressed to this customer a thousand miles away from its factory and referring to a sample of lacquer which we had analyzed and found to have a raw material cost of one dollar. Substituting fictitious names only, this letter reads:

December 13, 1932.

Blank Mfg. Co.
Blank City, State of Blank.
Gentlemen:

Attention of Mr. A. B. C.

Supplementing our letter to you of December 10 regarding sample of Blank Clear Lacquer No. X sent you for test.

On the basis of a new cost just established on this product we take this opportunity to file quotation with you at:

$1.32 per gallon in 5 gallon cans,
F. O. B. Your factory.

It is hoped that the performance of this clear in conjunction with the price will permit of early establishment with you.

Yours very truly,
(Signed) I. M. A. Dunce,
Industrial Sales Department.

The raw material cost was one dollar. Thirty-two cents was to meet the cost of label, container, freight, manufacturing, selling, administrative, development and the thousand and one other things embraced in overhead. In this particular case the manufacturer's offering, of a $1.32 article, in competition with a $2.65 price, or a reduction of 50 percent, was justly held in contempt by the customer as is evidenced by the customer giving us this letter together with the test sample. But, of course, it does not always work that way. Most often the competition is met with the net result that all that has been accomplished is that one competitor has cut the throat of the other with no gain to anyone but the customer.

Now I realize I may have digressed from the subject about which I was asked to say a few words, but I hope you will bear with me for the importance I believe it bears to our particular industrial finishes group towards the formation of which may good friend Mr. Esposito has lately labored so hard and which seems to have awakened a great deal of enthusiasm in our trade. We hear much about unfair and uneconomic practices, and unfair competition. Our association literature, our proposed code and our meetings together just fairly radiate such phrases as "guarantees," "gratuities," "false advertising," 'misbranding," 'mislabelling," and a new one just cropped up in our proposed NRA code, "enticing employees from competitors." They are all fine and have my whole-hearted approval. But, mark this well: They are all insignificant and inconsequential in their effect compared with a deliberate or otherwise quotation of a price below an inclusive cost plus a fair, reasonable profit. These other numerous unfair practices are isolated cases that can be taken care of as such and are generally local in their effect. To make a disparaging statemet of a competitor may injure that competitor, but not always. Sometimes it acts as a boomerang, as it should, and injures the maker. The damage goes no further. But to sell below cost—that is, without taking into consideration all elements including the development and servicing which we have been talking about, adversely affects the business and profits of every single one of us, and reflects on the intelligence or good faith of the members of our industry and holds it up to ridicule before the consumer who is the only one to benefit by it.

Doing a profitless business, selling below cost, entire cost, compels all competitors in course of time to similarly reduce their prices in order to be competitive. Without doing so, they cannot long remain in business. With all of us on a "non-profit" competitive basis our industry is financially ruined. For that reason, I say that selling below cost trespasses on the property rights of all others in the industry.

It is because of this far-reaching effect that I stress the importance of taking into consideration the cost of development and servicing in establishing our selling prices, code or no code.

I had hoped that the original language of Article XXII of our proposed code entitled "Selling Below Cost" might have been the Salvation to save us from each other. But even our able and persuasive Mr. Trigg and his code co-workers could not get the administration to come to our defense. As I read the present article, even if it is continued in the code when finally approved, which is not certain, it does not prohibit selling below cost because the various elements of cost mentioned are not sufficiently broad or inclusive. So if we are to better this situation, it must be done by our own co-operative efforts.

Science of Human Relations

At New Haven, Yale University has lately erected a magnificient building for the newly-created department for the study and advancement of the "Science of Human Relations." As one man put it upon inquiry as to what they did in that building, "I don't know what they do there, but what they do they do together."

I wish it were possible for this newly-organized group to introduce a little of the science of human relations on this matter of disastrous cut-throat competition. Buyers are willing to pay whatever they consider it costs to produce and service a product including a fair profit. A sense of fairness and desire that the supplier be enabled to continue in the business of producing something the buyer requires are the compelling factors. Our attitude towards each other should certainly not fall below the attitude of our customers in this respect.

Suppose we had all obtained the small sum of ten cents per gallon more on our sales of last year? The increase per gallan could well have been not ten cents but one dollar. But for the sake of argument let us say ten cents.

If our sales were 1,000,000 gallons we would have been $100,000 better off, and so on up or down the scale. The little 10 cents per gallon would in many cases have changed red figures to black. To quote the saddest words of all, "It might have been."

over and developed it to the benefit of the industry. I know from my own experience that it created many sales of quality merchandise where otherwise the customers would have purchased for price alone. The dealers who were fortunate enough to receive this poster praised the idea, this is my point:—Every manufacturer and distributor should have participated in the general distribution of such propaganda against cheap paint.

This great institution of ours is obligated to promote propaganda that will protect the paint buying public against such merchandise as this poster exposed.

I know there are thousands of dealers who do not want to sell paint products of poor quality—but they are forced into it by unreasonable competition.

But cheap, mislabelled paint, with all its falsified advertising behind it, is only one of many problems that is destructive to good business. Other problems will be brought before you this afternoon for discussion, and you will have your chance to suggest a solution and a way out.

Can Promote Welfare

Ladies and genelemen—I believe this new department can do much to promote the objective first mentioned in our certificate of incorporationfi which reads:—

"To promote the welfare of its members and to promote fraternal relations among manufacturers, jobbers and dealers within our industry. To guard against feelings of distrust, to cause the removal of evils and customs contrary to the principles of sound business and ethics."

Frank Bownes
Chairman on Trade Sales

The forty-eight members of the paint industry recovery board should have much in common with this department. The code committee members can furnish much data to this group that will assist in trade sales development.

Very pertinent to trade sales are our two outstanding sales developers:—Save the surface campaign and clean up and paint up. You will be again reminded at this session what they mean to you in sales development. We anticipate some constructive suggestions with regard to new promotion in these departments, especially the save the surface campaign, in a more elaborate promotional campaign on quality paint and varnish. This is the medium with which we should reach our public with the quality idea.

As far as I can learn from many manufacturers with whom I have discussed a more equalized basis of selling prices to dealers and jobbers, as well as painters and real estate owners, there would seem to be scant promise for any improvement of the situation. Jobbers are complaining of manufacturers selling direct to dealers at jobber discounts. Dealers complain of manufacturers and jobbers selling to painters at dealer prices, and so on. Even manufacturers with retail stores are persuaded to sell over the counter in small lots at dealer discounts. Some manufacturers who sell industrial accounts will arrange to supply their employees through the manufacturers' retail stores at dealer discounts. This practice, to me, is positively unfair as a trade practice, and moreover, unnecessary.

But I do believe we can take steps to show some improvement, at least, and I am sure that the effort behind the newly created trade sales department can accomplish much along these lines. I am sure that when manufacturers are shown that this new trade sales department has created one or two practical working plans, it will receive the support of the industry.

Need for Reform Shown

The daily criticisms and discussions of the deals and terms that this manufacturer or that manufacturer is making, together with the large number of returns from the questionnaire mailed out to the industry, is undeniable proof that there is a real and vital need for a department of this kind to take the initial steps toward the correction of the many destructive evils existing in the trade sales end of our industry.

In many cases it will be a blessing to some of the most consistent violators of the rule of good, sensib'e business—yes, even a lifesaver.

The bid for business is always keen, even when conditions are near normal. It has been deplorable during this depression, not alone in our own industry, but in others. Many industries have the same sales problems as do we, and I believe it would pay us well to keep close watch

Trade Sales Conference

Wednesday Afternoon, November 1

Also sponsored by both of the dissolved associations, the trade sales conference, held Wednesday afternoon, was presided over by Frank Bownes, of the Frank Bownes Company, Chelsea, Mass. At the beginning of the session, a newly edited version of the save the surface film was shown.

Presentation

Mr. Bownes, in opening the meeting, reviewed the change from the old order to the new, told of the cordial reception which had been given to the call for such a trade sales conference, asserted the need for reformation of trade sales practices and expressed the belief that the new set up afforded the machinery for achieving legitimate competition provided the members of the industry showed the proper disposition and determination:—

I realize that much time has been devoted to the discussion of the code but I am wondering how many of us appreciate what a blessing it was that these splendid associations of ours were formed back in the Eighties by a few farsighted men. I wonder if the organizers could foresee just how much the associations would mean to the industry in 1933, when we were to be confronted with the problems of a code for industrial recovery.

We owe much praise and tribute to these men and to those others who have worked unstintingly, unselfishly in the building and maintaining of the high ideals and principles of our associations.

Too much praise can not be given to the members of our code committee, and particularly to its energetic chairman, Mr. Trigg, for the untiring, efficient work done by this committee. I am afraid that there are many in our great industry who do not know what it meant in these trying times to have had such a splendid organization under such efficient leadership, guiding its destiny.

Under the new amalgamation of our associations we present to you this afternoon a new department and we hope a very constructive one. May I say to you that its success depends entirely upon the amount of cooperation that the associations' members devote to its functions.

We are stepping out, so to speak, of our old routine of devoting so much discussion to raw materials and production and are "tuning in" on the problem of sales. This department can go far and do much to improve conditions in sales work; it can do much to create a "live and let live" policy. For the moment, it may look like an impossible job—but the big jobs are always the interesting ones to solve.

It isn't to be expected that we can solve all the prob'ems before us this afternoon, but we can accomplish much while we are together. We can give this trade sales department a very auspicious start.

Plan Cordially Received

The spontaneous returns of the form blanks that we mailed out to the industry indicate conclusively that such a plan is desired by the industry. I wish it were within my power to solve all the various trade practices mentioned in the returns, but I am sure the trade sales division can cure some of the ills and materially benefit the industry as a whole.

As our program progresses this afternoon, we will come to a period set aside for floor discussion on these problems, and we ask your support and cooperation. These gentlemen here on the platform with me have pledged their support in getting the new department off to a good start. Each of them is keenly interested in the subject of trade sales, and each has prepared a brief and pointed discussion on a different phase of the subject.

Educational propaganda can be created by this department and broadcast throughout the trade. We mustn't live too much within ourselves if we expect to accomplish widespread results. I have in mind a job that was started this past year by our scientific section. It was only a poster aimed at cheap paint—but one of our large manufacturers, apparently, saw the value in it, took it

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on what other industries are doing to improve their own sales conditions.

The paint industry has always believed in quality products at fair prices, and I want to say here that it is not the large legitimate manufacturers of quality materials that give us most concern; it is the manufacturer of questionable reputation, who misrepresents, lacks knowledge as to overhead costs and sells below his actual cost. He is the worst violator of sound business principles and policies.

The shellac business is, unquestionably, in the most deplorable state of price competition. Even the concerns who specialize in shellac cutting are praying that something can be done to help them to better conditions and prices. This was brought home to me when I recently attended meetings of the shellac cutters who were endeavoring to form an association in the hope that conditions might be improved and I honestly cannot help but believe this particular line will show a considerable amount of improvement in the near future.

Importance of Local Clubs

During the process of amalgamation it has been suggested by the national association to rename the local Paint Club "The Paint, Varnish and Lacquer Association." I approve of this for the reason that it will give the local organization a more direct tie-up with the national.

The local units can ue of considerably more importance in promoting the constructive work of the national association. This can best be accomplished if the members who participate in the meetings of the national association will look upon it as their duty to attend the meeting of the local units. Much can be accomplished if the members in attendance here will participate more in the work of the local unit. Most of the constructive work accomplished in this association is confined to a comparative few.

To promote the ethics of sound business throughout the industry, the principles and policies created in the national association should be made an active part of the local association business program and they in turn should pass these policies along to dealers. Our own New England club, I believe, is a shining example of the service that a local unit can render to the industry. It has done much to spread the high ideals and principles of the work being done by our splendid national association.

It is absolutely necessary to reach and talk to groups of local manufacturers, distributors, dealers and painters if we are to have a better understanding of the principles and ethics involved in the operating of this paint and varnish business of ours. I am convinced that local dealers and painters are eager for such promotional education.

It isn't conceivable that any merchant wants to do business at a loss, with the prospect of eventually going into bankruptcy. The merchant and the painter are highly important links in the distribution and consumption of paint and varnish products. These two important outlets of our products need our cooperation and a proper presentation of the principles and ideals that have built the legitimate paint and varnish business and the national association. The local units can do much toward helping to improve conditions in this field.

Unsound Business Policies

The paint and varnish industry was by no means responsible for the depression. On the contrary, the paint business got a "break" as compared to many other industries. But during this now famous depression there developed within our own industry a number of unsound business policies that have resulted in many troublesome problems. The foundation of our industry's structure is as solid as the rock of Gibraltor and is still intact—but the principles and ideals of the men responsible for this permanent foundation must be perpetuated. All our efforts must be aimed at carrying on a great tradition. We must strive to educate our wayward contemporaries to see the folly of doing business in an unsound, unethical manner.

I have tried to make it clear that the local club has a job to do—a hard job. Every manufacturer in the district must lend his moral and financial support to its promotional activities.

A club should be given more responsibility—and more duties to perform. Definite action should be requested in the manner of our association. The local club is no longer essentially a social institution; there is too much important work to be done. If word were spread around that the local club was the clearing house and information bureau on up-to-date subjects of interest within our industry, the attendance of manufacturers, jobbers and dealers would be materially increased. Who isn't in need of news that affects his business?

The manufacturers' unit of the New England Club has accomplished a great deal, it seems to me. It is brought to all of us a clearer understanding of what is right and what is wrong in our every day business activities.

The dealer and painter should be informed of these articles in the paint code which affect transactions between them and the manufacturer or distributor. The local unit can accomplish this through a special committee for dealer publicity—through the local manufacturer—as is now being done with good results in the New England unit.

Creating Steady Employment

We, as manufacturers, have an obligation on our hands—we must create steady employment for our working class. Anything this new department can do to help stabilize profits on trade sales will do much toward the fulfillment of this obligation. If our country is to get back to a more normal basis of merchandising, we must adopt saner policies of marketing our wares than are now being used by many individuals in our industry.

The live and let live policy must be adopted. Do a nominal volume profitably with a well balanced overhead, leaving a net on which to make progress.

A bill introduced in the Wisconsin legislature proposed that manufacturers be compelled to give steady employment. Such a law might help to stabilize prices and the distribution of manufactured products. We will get nearer to permanent employment and a saner way of living when we get together and iron out some of the trade practices now in use, not only in our own industry, but in practically all other lines of business. It seems to me that a business which straightens out its own practices will not have to fear help from an outside agency.

As a background for these trade sales problems, I believe we have a program of education on our hands. It is a proven fact that more can be accomplished constructively than destructively. I am of the firm belief that this new trade sales department can build constructive selling programs that should reach every concern, sales manager, salesman, dealer and even painters. In such a program as this, every manufacturer must surely see his own responsibilities.

Before we get the code functioning on a smooth basis, it might yet be necessary to declare a moratorium on business, as was done on banks. It might not be a bad idea.

Saner Trade Practices

Millions of dollars in profits are sacrificed every year by insane ideas and schemes for underselling and undermining competitors. We, ourselves, must to some extent take the blame for the poor showing we have been making. Much of this great loss can be turned into profit if we will educate with a saner policy of trade practices. Someone has remarked that if things were better we wouldn't be worried by unethical competition. In my opinion, things can never be better until competitive conditions are improved and conditions can not improve until somebody takes the step to educate with a constructive program.

What a subject the cost of sales will be when we get to it! It's a problem that might take weeks of study and preparation. Yet much can be accomplished in this discussion. If many concerns could be educated to see why they couldn't hope to accomplish profitable results because these efforts in sales work is spread out thin.

If many concerns would work up a well-devised plan of concentrated effort in a more condensed territory, building good will, making and preaching quality materials, selling paint and varnish products of such qualities as they are supposed to be and give the home owner and consumer the service they are entitled to expect, they would make more profit and progress than they now do by racing like mad all over a thinly spread out territory determined to make a sale at any cost with a much less prospect of repeat business.

I like to liken a business unto that beautiful expression — "Only God can make a tree." If we could only promote the growth of our business as God promotes the growth of a tree, solid foundation of roots, staunch growth of the trunk, then branching out as the trunk will bear the weight of its branches under even the burden of snow and ice and the pressure of vicious winds. With all the millions of beautiful trees we have there is still room for more.

To my mind there is another real reason why we should perpetuate this educational program in the trade sales end of our industry and that is for the benefit of the younger men coming into our industry. If we expect to perepetuate the ideals set up by men responsible for the splendid foundation of our industry, the young men shuold be trained to preserve these ideals.

Sales at a Profit

The menace of the price-cutter, whom he likened to a maniac wandering loose in the streets, was the burden of a paper presented by Rudolph Zinsser, of William Zinsser & Co., New York:—

This hotel seems to be a great place for conventions. They seem to have a different one every other day. I came here on Friday to take in the fair, and as I came up to the desk the clerk said:

"Casket Manufacturers and Undertakers Association?"

"No," I said, "it's being connected for twenty-three years with the shellac end of the paint industry that makes me look this way."

These meetings show that it doesn't matter what we sell—paint, varnish, lacquer, shellac—our problems are the same; we are all in the same boat, and we must solve them together. I was tremendously pleased to hear that a new departure was to be inaugurated at this year's paint convention and an entire afternoon will be spent discussing trade sales. And, as your announcement asks, "What is more important now than sales at a profit?" Profit? It seems to me that I have heard that word somewhere before, but that must have been some years ago. As a matter of fact, I believe that, in spite of all the talk these days about the depression, the new deal, the NRA, the higher wages, the shorter hours, the rising prices, the dangers of profiteering, the increase in consumer buying and the lag in capital goods (to name only a few) the question of "profit" has been almost overlooked. Without fair and reasonable profits, manufacturers cannot continue to pay new deal wages, or pay much needed taxes to the government, or even remain in business. Everything, in the end, gets back to the pay envelope. And the pay envelope depends on what the "boss" is able to get back in profits. If the boss can't make a profit, then there is soon no business, no jobs, no pay envelopes—nothing.

For four long years, American business, in most instances, has been operating at such a loss that prices must be raised in greater proportion than wages. That is a pretty important point to remember, before talking or worrying too much about profiteering. Profiteering is bad, but let's see if we can get all industries back to making a small profit, before we worry about making profits that are too large! During the last few years, all manufacturers have been bled white by the most unfair and unscrupulous competitive practices ever seen in our industrial history. Quality makers were being hard pressed by "chiseling" price competition.

Menace of Price Cutters

If we will learn anything from this depression, it should be the utter futility of trying to keep alive on cut-throat price competition. Competition we should have—competition in quality, service, new products—but the deliberate, the ignorant price cutter should be *and will be* looked upon as the enemy, the racketeer of every industry, and he should not be allowed to run around loose any more than we allow a crazy maniac, likely to harm everyone he comes in contact with, to run around without being locked up or controlled. Long before the NRA came along, legitimate manufacturers in every line of business were worried about the "chiseler." He took the profits out of the industry for everybody, by selling at lower than the cost of decent production.

If there is anything that peeves me in this world, it is that even after four years of depression, with profitless industries on every side trying desperately to dodge the receiver, we still find a few individuals who, in this day and age, fail to realize that no man is sufficient unto himself. When they say, "No one is going to tell me how to run my business," they think they are smart, but it simply shows that they haven't realized that we have no choice but to adjust ourselves to modern economic conditions, whether we like it or not. If the old way of doing business was right, why in God's name did this enormously wealthy country get itself into this frightful mess? Nobody wants to tell you how to run your business, but you are asked to co-operate, rather than compete, with your competitors in eliminating abuses and in making your entire industry profitable. We must learn that no individual concern, no matter how large or how small, can prosper (it may manage to just keep alive, but it cannot prosper) unless the industry as a whole can prosper. And the country can't be prosperous unless most of the country's industries are prosperous. And an industry can't prosper unless it makes a profit—and there we are right back to where we started. I believe that a carefully worked out code, drawn up by the majority of the best houses and best brains in the industry will enable an industry to become profitable. But the industrial codes will fail if the men who drafted these codes are not big enough to make them work, or if the government refuses to give the industries the power to govern and police themselves. The chisel must be taken away from the price tag experts. And, incidentally, the cynics and the "It can't be done" boys, always present in every industry, aren't much help, either.

Brass Knuckles Are Out

The old system of competition came near destroying itself. New Marquis of Queensbury rules are being substituted for hitting below the belt or using brass knuckles. And yet some still say, "I'm going to run my business any way I see fit. If I want to hit below the belt, who will stop me?"

Every form of competitive sport has a flock of rules and regulations, and umpires and referees are always there to see that they are enforced. Why shouldn't there be rules for competitive business? If the government adheres to its announced policy—and frankly I sometimes worry that it won't—the NRA isn't going to run your industry. Your industry is going to run and govern itself, if it has got the brains and the vision to grasp and take advantage of its opportunity. Most of us aren't aware of it, but we are taking a revolutionary step ahead in the history of industry.

A code that simply states that honesty is the best policy and that you should not knock your competitor may be a nice one to frame and hang on the wall, but it won't do much good. A code must have a real set of rules and regulations to which all must conform, not fifty or seventy-five but one hundred per cent. I ask again, "Will the men who drafted these codes be big enough to make them work?"

If they can, they will have eliminated in one bold stroke "the most important and troublesome competitive problem" and it will be possible to make trade sales at a profit.

Another thing that for years, but particularly during the last few years of an absolute buyer's market, has worked against industry making a profit, is the old story that most salesmen work for their customers instead of for their employers. I do not mean that a good salesman should not have the real needs and problems and interest of his customers constantly in mind, but he should also think of his house and see that every one of his sales show his house a profit.

Some salesmen, and, in my opinion, the majority, even including some of the best of them, spend most of their time asking their house to make this concession for Smith and that concession for Jones. They ask that this customer may be given an order for one gallon cans at the five gallon price, or that the price be shaded in order that he can land a good-sized quantity. Every concession, every special price, or special terms of payment, cuts into the profit of his house. A good salesman should fight for the principles and prices of the house he is working for and not be ready to give in to every request or demand of his customer, regardless of how unfair or asinine it might be or because his customer tells him that if he will not get it for him, he will turn to one of his competitors who will be sure to give it to him.

Of course, it is not fair to blame only the salesman for this, as it is up to the employer to turn down these unwarranted requests, and after this is done a few times, the salesman stops asking for them. And that brings me to one other point (to mention, but another one of many that you are all familiar with) that interfere with making sales at a profit. And that is the dread disease shared by employer and salesman alike—the disease of volumitis. Four years of the depression, strange to say, haven't materially helped to eliminate this disease. Now employers and salesmen are fairly normal and level-headed in regard to sales of average size, but the minute they come across a large order—fifty or a hundred barrels, or a carload—they see spots in front of their eyes and grow faint. Hypnotized by the size of the order, they immediately feel that a fair price with a fair profit in it won't land the order. They figure that even if the big order is taken at cost it will help swell the volume and will, in some mysterious way, cut down the overhead on all the rest of the orders on the books. If Henry Ford made a success at selling a big volume of cars at a small profit, we can do the same!

Percentages of Profit

Many say that it is better to do a tremendous volume at a very small profit, than a smaller volume at a fair profit, but how about in these days of smaller volume? If we were able to decrease our profit per unit as our volume increased in 1929 then we must increase our profit as our volume shrinks in 1932 and 1933. Not only was our volume in pounds and gallons smaller during the depression, but the cost per unit, or, in other words, our total volume in dollars and cents, was cut in half, or even more. Twenty-five percent gross of a $1 a gallon is a lot less than 20 percent of $2.50 a gallon. During a period of depression, with lower prices and smaller volume, we cannot hope to double our sales, so our only salvation is to sell a smaller volume at a better mark up.

In my opinion, the most important lesson we will all have to learn is how to make a profit on a smaller volume, both in pounds and gallons, and in dollars and cents. We must not forget that, for the time being at least, there is just so much available business to be divided among the members of an industry. For anyone, or for all of us, to take a large portion of it at cost or at a ridiculously small margin of profit, just to get it or to take it away from the other fellow, isn't going to help you or your industry. If we all figure and know our costs (not only of manufacturing but also what is just as important, and usually not so well understood, namely, our exact cost of selling) and if we all refuse to take any business that does not show us a decent profit, our books will be in the black instead of the red at the end of the year.

I have so often repeated again and again a particular statement to our sales force that my brother has threatened to put that statement on my tombstone when I die, but in spite of that threat, I am going to state it again:—"I would rather do a smaller volume at a profit than a large volume at cost or at a loss"—and by following that principle over a long period of years our company has succeeded in remaining in business, and our volume has slowly but steadily grown, while the majority of our competitors, in our little industry, going after volume and wanting to be the biggest, have come to grief.

Reducing Quality is Fatal

Another point that has surely been driven home by the experience of everyone during the last few years is that reducing quality to meet lower prices leads only to ruin. Driven almost to desperation by cheap price competition, many began to think that people were not interested in quality but only interested in price; consequently, the country became flooded with the cheapest, shoddiest material in every line that can be imagined. People were rapidly becoming accustomed to lowered standards in the things they bought; not willingly perhaps, but because of a state of mind created by economic conditions. They accepted lower prices with enthusiasm. Smaller budgets, growing out of lowered incomes, built up a bargain complex and good old-fashioned quality began to take a back seat. A spirit of resignation and defeat crept into the psychology of the buyer. He still wanted quality, but he felt he couldn't afford it. He shopped more than he ever did. Shirts at eighty-nine cents sounded good to him; the laundry soon disillusioned him, but he kept on; and the good quality shirt that would have been an economy at two dollars, became an extravagance in his eyes. So quality gradually became only a remembered word; price was king.

But the American consumer is not a cheap-John. He wants quality products; he has used them in the past; he will continue to use them in the future. He will come to insist upon having them. The seller who fails to realize that is sure to lose out. Right now, in every line, well known, trade-marked materials are crowding out the private, unknown brands with hidden identity and responsibility. Look at the advertising of the big department stores and see how they call attention to the national brand names of collars, shirts, suits and shoes they offer.

No business ever built a lasting reputation or succeeded in staying in business for any length of time by relying on cheap prices to offset the unsatisfactory or inferior quality of its products.

The business that builds its house on the firm foundation of quality and then has the courage to price its products according to the exact cost plus a living profit, and (what takes even more courage) lets the other fellow take the business that doesn't conform to these requirements—does not have to be afraid of the big bad wolf of competition.

But most prices are figured by sheer guesswork, or by copying the man down the street, regardless of anything else. You fully realize that in order to make the same profit, a 5 percent cut in price requires a 12 2/3 percent increase in sales volume; a 10 percent price cut might not seem like much, yet it requires 50 percent more volume to make the same profit, mind you. And who at a time like this can hope to increase his volume by 50 percent.

The buyer is willing to pay a fair price if he is convinced that he is getting something for his money. Here is your chance to show your merchandising ability. First be sure of top-notch quality, then set your prices on a fair basis. Pass up the order that means a loss to

you. Be wise enough to take a profit. Sell quality while the other fellow sells only price.

These are your bulwarks against cut-throat competition and your assurance of a fair profit!

Save the Surface

In the absence of Charles W. Eastwood, chairman of the industry's committee on this campaign, Horace S. Felton, of Felton, Sibley & Co., Philadelphia, reviewed the history of the save the surface compaign. told of the enormous value of the slogan and urged co-operation by every manufacturer in its use. He also called on Miss Lonore Kent, director of the compaign, to explain the methods and results obtained in publicizing the save the surface movement through newspaper, radio and magazine. The formal report on this subject is printed be-

H. S. Felton's Paper

Before I present my formal paper, I would like to make an observation; that is, I think there is a danger in doing things too well. In our save the surface campaign at the present time, the work consists largely of publicity. I think that work is being so well done that there is a danger on our part of doing nothing for ourselves and expecting that group shall carry the load for us. The purpose of my paper today is to try to present to you certain things which I believe we all can do which will help along in a great measure this work which is now being done.

I did not know until Saturday night that I was to present this paper and since of necessity I am using some statistics, I am going to ask you to overlook any errors which I may make. The statistics which I use in substance are available to me but not in Chicago.

The opportunity to discuss save the surface is always a refreshing experience for me for the reason that I have given in the past a great deal of time to the work and believe so thoroughly in it. I am very glad, therefore, to find that your general chairman, Mr. Bownes, has seen fit to give the work of the save the surface campaign such a prominent part in the discussion this afternoon.

I take it that my job today is to attempt not only to point out to you the great value which this slogan still holds for our industry, but to suggest as well ways in which we may intensify the work so far as the distributor, dealer, and consumer are concerned. To me, save the surface is an investment which is just as real as any tangible investment that one might make. May I ask you what you would do with any investment that had cost you, let us say, a million dollars, but which had been appraised by experts, competent to judge, at seven million dollars. If this investment, for instance, represented a piece of real estate, I am sure you would not allow it to pass into a state of decay. You would not allow the taxes to lapse, but you would do everything in your power to cash in on your investment, by lease, rental or such other plans as might be available to you. Well, we are exactly in this position with our save the surface campaign. Its cost to us in dollars and cents is approximately the figure which I have named, and experts appraised its worth at the seven million dollar total, already referred to.

It has been essentially a trade sales problem endeavoring to clear the products of our industry in a quicker manner to the consumer by way of the distributor, the dealer, and the master painter. Suppose we consider now, for a few minutes, the opportunities which are available from a trade sales standpoint in capitalizing to the fullest extent the worth which has already been created. The job at the outset when save the surface came into being, was of necessity a long and arduous one. However, since a sufficient amount of fuel has already been spent in getting the engine off center and getting it smoothly running on its way, the necesity for such expenditure is not apparent at the present time, and our job now seems to be to simply see that the furnace is adequately stoked in order to keep the machine in motion.

Employing Retail Outlets

What are some of the tools that we might use at the present time in keeping our publicity active and using these avenues of approach to the fullest extent? Well, we think first of all of the retail outlets through which our products pass. There are somewhere between fifty and seventy-five thousand hardware stores in the United States, approximately ten thousand paint stores, ten thousand department stores, large and small, and approximately five thousand other outlets which might be cataloged as drug stores, lumber yards, etc., through which paint is being cleared in a retail manner. This gives a total of approximately one hundred thousand outlets serving millions of people daily, and if we can simply see to it that our slogan is kept prominently displayed in at least a fair percentage of these stores, it is going to go a long way in keeping the slogan active and keeping it working for our interest.

What are these helps that are available for the dealer at this time? You are quite familiar with them, I am sure. They consist of the window trims, the banners, the Guide Books, painters' caps, and what not. I believe we ought, wherever we can, to avail ourselves of this save the surface material as one method of good will to keep our message before the public.

We next logically turn to our own salesmen as ambassadors of good will, but I wonder whether we really inculcate in them, as we should, the necessity for effort on their part, to keep distributors, dealers and painters alive to the possibilities of our slogan. There must be a total of approximately fifteen thousand salesmen in our industry, all of whom could be potent forces in promoting the slogan.

The next avenue of approach which I would like to suggest to you is the use of your company letterheads. Averaging 100,000 letterheads to approximately 1,500 manufacturers, there is a grand total of something like 150,000,000 impressions which we might make on the consuming public through the use of our slogan in this manner I think this is a very minimum figure and the possibilities are that the number would be very much greater, perhaps three to four times that amount.

I have pointed out to you the ideal use with respect to this situation, but let us see just what is actually taking place. Because in my work as chairman of the nominating committee I have with me at the convention twenty-eight letterheads of various companies in the industry. I have cataloged them to find out just how many are using the slogan on their stationery and here is the result:—

Neglect of Slogan

I have used the break-down we are using right along, industrial sales and trade sales. Now, under industrial sales, out of the twenty-eight, three are using

Horace S. Felton

the slogan, six are not using it. With respect to the trade sales division, two companies are using it; seventeen are not using it.

If you are willing to concede, for instance, that the Eagle-Picher Lead Company should be classed as an industrial concern, and I really believe this to be their proper classification, then out of a total of twenty-eight manufacturers, only one manufacturer catering to trade sales is using the slogan. I consider this a most unfortunate situation and would appreciate it if some one will explain to me why this slogan is apparently of more value to a manufacturer catering to the industrial trade than it is to a manufacturer catering to the trade sales.

You will have to bear in mind, of course, that I have used my own judgment in separating these companies, but if you would check me on it I doubt very much if your checking would vary in more than one or two cases with my own. So you will have to give me the benefit of the doubt and believe that I am about 99 percent accurate in the situation.

My wonder in this situation is tempered, however, when I consider that the three types of letterheads used by our association:—Namely, the educational bureau, the American Paint and Varnish Manufacturers' Association and the National Paint, Oil and Varnish Association are not themselves setting the example and the slogan does not appear on the stationery of any of these groups. I hope this condition will be corrected shortly so that the example will come from the top down rather than from the bottom up.

Now, let us consider the next tool which is available to us and which, I think, could be used very effectively. I have mentioned this before and believe that it contains real possibilities. I refer to the use of the space available on the sides of manufacturers' trucks in keeping our message before a great cross section of the consuming public. There must be approximately five thousand trucks now being operated by the paint industry. You have all noticed, I am sure, how effectively the American Express Company uses this medium of advertising, and if I should ask for a statement from the audience today, I am sure a very large percentage of those present would answer correctly that the advertisement so featured is the Wrigley Chewing Gum. If the campaign could initiate this service, it seems to me that manufacturers ought to be willing to subscribe to it on a monthly basis, and figuring two sides to a truck, ten thousand impressions that might be made upon the public would daily reach millions and millions of people. The laundry association is doing this very effectively now, and these posters, like the Wrigley ones, are printed in two, three and four colors and are driving home a real message to the very same people whom we ought to be reaching daily.

Increasing Paint Sales

May I call your attention to a survey recently made regarding the worth of a given person in a community to a list of thirteen types of stores. The grocery store leads the list, of course, and the hardware store is fifth on the list, showing that the average person in a given community is worth to that hardware store $10.71 per year. If the very fine publicity work which is already being carried on and with a partial use at least of the various aids which I am suggesting in this presentation, it is quite within reason for us to bring the hardware store into third place. Here is how we might do it:—If we could put into the hands of the consumer just one more gallon of outside white, for instance, per capita, we would then step up this buying worth to $13.93, and, of course, would materially increase our sales. This is an objective which is hardly attainable 100 percent, but even if we could effect it 25 percent, which I do not think unreasonable, it would be a great boon to our industry at this time.

In closing, may I urge you to consider this situation from the standpoint of your own business to devise such means as are within your control to intensify save the surface in the various ways which have been suggested, as well as in other ways which will of course suggest themselves to you. I urge you to review your investment, to revitalize it so far as your own business is concerned in order that you may reap for yourself some measure of the present value which is being created in your behalf by our publicity department.

Inferior Quality Paints

"Where does the industry stand on inferior quality paints?" This was the question asked by F. F. Whittam, in his address:—

The paint industry has always shunned a discussion of quality until it has been forced by circumstances or legal action to throw the searchlight of inquisition upon itself. You may find two or three close friends discussing it in private, damning everybody but themselves and, finally, you would find the smaller manufacturer condemning the large one, and vice versa.

Since today is one of revolutions, not armed but more or less peaceful, bringing about new theories, new deals and new eras, it was thought that the subject of quality, particularly inferior quality, could be frankly and openly discussed. It is therefore in a constructive way that this subject is brought forward with the idea that some practical solution may be found to cut off the supply of low grade products which are in reality mislabeled with the terminology of paint.

Undoubtedly our thoughts have been directed to this subject by a selfish motive for satisfactory profits. I believe that we must think of it from an altruistic viewpoint which will gain the goal of the former. The public must be protected and it is only through a determined stand of organized industry which can bring about this protection.

The term "quality" has been so maligned by over ambitious or selfish industry, that today we find the word used on every type of product or service. We find manufacturers even using superlatives, such as "the highest quality paint made."

We, of course, recognize that we have been passing through a price market, and the consumer has been endeavoring to get the most for his money. In most industries the manufacturer has been trying to capture as great a volume of business as possible to keep losses low or profits as high as possible. This era has brought forward a considerable number of unscrupulous manufacturers, many who know nothing of laboratory control or formulations except perhaps a few formulae passed on to them by some raw material houses. These manufacturers with little investment, small overhead and little in the way of selling expense have concocted a mixture to sell at a price and have called it paint.

Buying Paint Blind

The poor old public, having had no enlightenment on the subject of paint, has been the gullible market and is paying a terrible price. To the ordinary layman a gallon of paint is simply a gallon of paint. It is something which is bought blind and a product which he is buying to do a specific job of protection. You and I know what protection he is getting and further know the tremendous bill which Mr. Public is going to pay to correct this evil.

It is, therefore, time, from a standpoint of self-preservation that something be done to eradicate a malicious evil.

Having just returned from a trip through the east, southeast and south, I have found conditions which I am sure are prevalent almost nationally. Outspoken advertisements and window signs calling attention to wonderful bargains in paint for from eighty-seven cents to one dollar and forty-nine cents per gallon. You know the analysis of this type of general paint products, and there is not a one of you who would use such a paint or recommend same to your close friends or associates.

Yet dealers and jobbers losing business to these low price paint stores are crying for products to meet such a competition. To keep out competition from your account you have made something to sell at a low price or the cheap inferior manufacturer has sold your account the low grade, low price product. I just hate to use the word paint when referring to such a product, because it is nothing but junk.

It is true that the great majority of manufacturers have an honest desire to manufacture and sell only first quality paint products. But even a majority can be dragged down into the mire, unless some definite and organized campaign can be waged against this inferior quality merchandise. We as an industry are in a much better position today to do a job than we have ever been before. We have a power of organization never before granted to industry, and we can sink or swim, survive or perish in accordance with our organization effort.

Educating the Public

In my humble opinion, there is only one way of combating this cheap, inferior paint competition. That way is through an educated public. There is no single manufacturer or group of manufacturers who can afford to promote an educational program. It can only be done through the industry's organization, and then it can be done thoroughly and effectively.

We learned the power of advertising a few years ago when production was almost on a parity of today, and we started earnestly and vigorously with the save the surface campaign. Production then was doubled and trebled.

We are at such a period today, on the threshold of a new era of higher production and consumption. But old methods must be discarded and new ones put into effect. I heard a plea for a more general use of the slogan "save the surface" and I agree in principle, but I must add that the public be educated to get this protection through the use of quality merchandise.

We should as an organization take cognizance of this evil of inferior quality products and plan some concerted action along lines of an outstanding educational policy. We should then support such a program both morally and financially, and by so doing we will bring success and profit to our individual businesses.

This is no new idea. It is a revival of an old program built from experience. It is putting into effect in this industry what other competitive industries are planning.

A well defined program of national and local advertising against cheap, inferior paints on the one hand, and building a market for quality products on the other, will bring results of many fold at a minimum of cost of a sane campaign.

If such a program would be immediately studied, planned and launched in the near future, we could all sing "Who's Afraid of the Big Bad Wolf"—inferior paint? We could also feel a happy reflection in profits throughout the industry.

The case of inferior paint products is now in the hands of you, the jury. The public awaits your verdict. If you wish to maintain our motto "In the public service" this verdict cannot be delayed.

Better Business Bureau

Harry H. Van Horn, president of the National Association of Better Business Bureaus, who has been advising the National Recovery Administration on this subject, attended the trade sales conference especially to talk with the participants and gave details of the campaign conducted in Columbus, Ohio, against "gyp" paints:—

I want to divide this little talk of mine into two parts. In the first part, if you will forgive the bad taste, I will tell you of our little intensive campaign against the advertising and selling of "gyp" paint in Columbus, Ohio. By giving you the actual details of this successful campaign, you will more clearly perceive the significance of the second part of my talk, in which I will point out what I believe to be a practical plan of co-operation between your association and the Better Business Bureaus, which should result in lowering the amount of unfair competition in your industry to a minimum far below that of any other industry.

In April of 1933 as a result of the inspiration given to the Columbus, Ohio, Better Business Bureau by our good friend, Tom McFadden and M. Q. Macdonald, we entered into an aggressive campaign against highly adulterated or "gyp" paint.

Our first step was to purchase paint, through shoppers unknown to the paint retailers, in response to an advertisement which read—"just received a consignment of approximately 10,000 gallons pure linseed oil A-1 grade paint $1.30 per gallon." Arrangements were made with the Department of Agriculture for the State government which has the responsibility of enforcing the paint laws of Ohio, which, incidentally aren't worth a whoop, to have one of their inspectors accompay an investigator for the better business bureau, to act as a witness when the paint was purchased. The paint was then tested in the chemical laboratories of Ohio State University, where it was found it was made up of 35 percent pigment and 65 percent vehicle. Placards in the store advised that it was "pure linseed oil $2.95 guaranteed paint—$1.30 a gallon." Fifty-one percent of the vehicle was found to be water, or, in other words, one-third of the gallon was water.

This, and other tests, were used as the basis for the beginning of a publicity program, carrying the facts directly to the consumer by means of weekly radio broadcasts.

Early in May a radio playlet was prepared, in which an attempt was made to dramatize the experience of two women in buying paint for one of their homes.

A bulletin was issued to a mailing list of approximately eleven hundred in Columbus. In this bulletin cheap paint was pictured and below the illustrations, the actual tests made by the State authorities were set forth.

A memorandum was then sent to the advertising managers of the daily newspapers, enclosing a copy of the simple illustrated bulletin giving the results of tests made on paint advertised in the newspaper columns. Copies of the memorandum to the newspapers were sent to the paint manufacturers and retailers of the city.

Co-operation by Newspapers

H. A. Lesson, the principal of the Cadillac Paint Manufacturing Company and of the various paint manufacturing company names under which he operated in Detroit, opened a store in Columbus early in May, which was owned and operated by a Detroit man who purchased the paint from Lesson. This man called his store the Factory Paint Store and he offered advertising to all the newspapers for dollar paint. He claimed it was ground in pure linseed oil. Due to our previous education, the newspaper executives, after receiving the tests of some Lesson's paint and finding that the test showed that the paint was at least 25 percent water, refused his copy. The owner of the Factory Paint Store was only successful in placing one advertisement in the daily newspapers. In that advertisement, after being warned that he would be held accountable by the better business bureau, he carefully advertised a paint which contained a formula on the can. This advertisement was offered to a morning paper late at night and an employee who did not know the circumstances, accepted it and it was published.

The better business bureau, through investigators, purchased some of the advertised paint. It was analyzed by the State authorities. It was found that the analysis of the state chemist was considerably different from that published in the formula on the can, and in the advertising. It was found that among other things, where the advertised formula indicated no water, approximately 30 percent of the vehicle was water. There was a considerable delay in obtaining the test from the state authorities, but as soon as that was available, I signed a warrant for the arrest of the owner of the store, charging him with violation of the Ohio advertising statute. Under this statute, any one convicted is subject to a fine and/or imprisonment, or both.

The manager of the Factory Paint Store made desperate efforts to get Lesson to come to Columbus and help him in the defense of the trial. When he was unsuccessful he volunteered to plead guilty with the agreement that he would discontinue business in Columbus within thirty days. The court was advised of this condition. After the evidence had been submitted, the case was generally continued, with the understanding that if he did not leave town or if there were any complaints about selling the paint through misrepresentation, a penalty would be inflicted.

Failing to receive newspaper advertising, this so-called Factory Paint Store resorted to house to house dodgers.

Photographs of the front of the store were taken to be used as evidence, if necessary, in case of trial.

Some of the community and weekly newspapers of the city were offered the advertising and one or two accepted. When the facts were presented by the Better Business Bureau, advertising was promptly refused.

Radio Time Cancelled

The owner of the Factory Paint Store then put a large sign across his store—"The newspapers have refused our advertising. Listen to our radio program at such and such a time over a local station." The facts were then presented by the better business bureau to the three local radio stations and the contracted time was forthwith discontinued.

The evidence collected in this campaign in Columbus was carefully compiled and filed with the Federal Trade Commision. Within the last week we have been advised that formal complaint will be forthcoming in the near future and that a hearing will be held in Columbus to build up the evidence in the case.

Each and every step in this campaign was the subject of repeated newspaper stories.

Additional bulletins were issued advising the members of the better business bureau of the results of the campaign.

All of this material was mailed to the other fifty better business bureaus in the United States, with the direct result that several of them entered into similar active campaigns.

This intensive work over a period of three months, has so thoroughly educated the newspapers and radio executives, public officials, and the public generally in Columbus, that it is my opinion that when the paint season starts next Spring any individual who attempts to sell "gyp" paint in Central Ohio will find very real and substantial opposition. I might add that when the Factory Paint Store closed up in Columbus, several retailers who handled distressed merchandise lines of that kind, decided they did not care to buy out that particular stock even at a very low figure, after being advised by the Better Business Bureau that if they did, they would be expected to put large signs in their stores, giving the exact formula of the paint which they sold. The unsold stock was shipped back to Detroit and the owner of the Factory Paint Store advised that his loss for his brief Columbus experience ran into many hundreds of dollars.

There is no question in my mind but that had he been permitted to operate unopposed, he would have ruined the paint business of the city, not to speak of the damage done to the public who purchased it and put it on their houses. I might add that we used the facts developed in this campaign to do our best to educate the public to the fact that it is penny wise and pound foolish to buy cheap adulterated paint.

I want to express here and now my appreciation to Messrs. McFadden and Macdonald for the very able assistance, advice and guidance which they rendered throughout this little campaign of ours.

Sees Opportunity for Industry

Now for the second part of this talk, wherein I want to point out what in my opinion is a wonderful opportunity for your industry. The paint and varnish industry, because of the existence of your unfair competition bureau and the excellent personnel which mans it, can, through the enforcement of your NRA code, do a marvelous job, if it will take full advantage of the better business bureaus in cities where they exist. I do not mean by that, that you cannot do a splendid job without the assistance of the bureaus, but rather that you can do a much better job by using them.

In Columbus we have just issued a bulletin on the subject of the enforcement of permanent industrial codes under the NRA. I have brought some additional copies of the bulletin along and will be glad to give a limited number out to those who are interested. In that bulletin we have pointed out what we believe to be the very obvious shortcomings of a system of code enforcement through temporary compliance boards, or any such arrangement. I know from my personal experience in Washington while for two months I was a consultant on the NRA staff on unfair advertising and selling, that the government will leave the enforcement of codes to industry and only sit in sufficiently to see that the codes are administered fairly.

Just as I believe voluntary compliance boards do not offer the best solution for enforcement, I likewise feel that there are distinct limitations of the beautiful theory of business policing itself. I recently sat in on a meeting of the local code of enforcement committee of the oil code for central Ohio. Here the heads of the various oil and gasoline companies were sitting around a large table filing complaints against each other; and the acting chairman and acting secretary, who were heads of companies, were making written requests upon various competitors to bring in to them a copy of their sales contracts with various firms. The meeting I visited was their fifth weekly meeting and it was already obvious that it was only a matter of time until the perfectly human strong competitive feeling would bob up, disrupt the committee, and end the beautiful picture of business sitting around a table under the wing of the "Blue Eagle," like the members of the "Kingfish's" lodge, the "Mystic Knights of the Sea," and regulating the brothers' efforts to get new business.

Competent Handling of Complaints

The retail merchants of Columbus, and other cities, have had a broad experience over a period of years in attempting to secure proper enforcement of the state advertising laws. They found out many years ago that these laws could not be enforced by competitors sitting around a table and complaining about alleged violations. They found from their practical experience that the only way to do the job was through a disinterested, fact-finding organization which could receive complaints; treat them confidentially; make disinterested, fair and impartial investigations; use the maximum of persuasion through the backing of the press, through the backing of membership taking in a cross-section of the leading business firms of the city; and finally, if necessary, through staff personnel trained to recognize a violation of the law, to collect and present evidence in such a way as to command the respect of governmental prosecuting agencies and following it through to see that offenders were properly punished.

This job can only be done with a maximum efficiency from a local standpoint, in my opinion, through some local agency such as a Better Business Bureau, which has the proper contacts with public officials, knows the local situation thoroughly and has had experience in successfully prosecuting cases.

The set-up of the American Paint and Varnish Manufacturers' Association is different from any other industry with which I am familiar, in that you have done a splendid job from a national standpoint, on unfair competitive practices. If the better business bureaus are utilized by your industry, Mr. Macdonald and Mr. McFadden could practically have fifty branch offices over the country, the staffs of which they could easily educate and train to do an efficient job of combating, from their unselfish standpoint, the unfair practices in your industry. I believe the case I have cited to you of our campaign in Columbus, takes my suggestion out of the realm of theory and clearly pictures to you the practical benefits to be derived from it. The suggestion is not particularly new. It has been already followed in a measure in other cities. My thought is that you merely expand what has already been started.

I feel sure that other Better Business Bureaus will find the same pleasure that we have in Columbus, in working with Mr. McFadden and Mr. Macdonald.

Discounts and Rebates

Use and abuse of discounts and rebates was the subject discussed by E. T. Gray before the trade sales conference:—

In discussing this subject of volume discounts, I would like to go back just a few years, sixteen to be exact, to a time when I was general salesman for my company, covering a fairly good portion of the central part of the United States, and I recall that I had practically no complaint to make about my competitors giving volume or special discount to the trade in those days. But during the past fifteen years, special or volume discounts have gradually crept in.

We have heard more and more about an increasing number being given, year after year, until the volume discount proposition today is a matter of grave concern to the industry for the reason that the misuse of it is causing the industry a loss of many thousands of dollars per year.

The giving of volume discounts may be sound practice when kept within bounds; when out of bounds it works havoc with profits. It may be sound practice when it is based on the lowering of the manufacturer's cost of doing business due to the volume of sales enjoyed. Large volume entails less selling and distribution expense in ratio to the sales involved and can thus be justified.

The giving of extra discounts to dealers for a certain volume of business per year also acts as an incentive for the dealer to concentrate his purchases and go after more business and build. It is in the nature of additional compensation or award for extra effort performed.

This might all be very fine if such discounts were given to only those who earned them, but unfortunately such is not the case. While probably most every firm in the paint industry gives volume discounts, they do not all adhere to the same schedule. It has been the practice, I think, of many to start extra discounts at a volume of $2,000 per year, increasing the discounts until limits of $20,000 are reached, and all buyers within the range of $2,000 to $10,000 per year, receiving rebates or retroactive discounts at the end of the year; those over $10,000 being given the discount on the invoice. Where retroactive discounts are given, they are, of course, earned. When discounts are placed on the invoice, they are all too often not earned, especially so since 1929.

In seeking new customers or agencies, a salesman many times assures his company that the prospect is a $10,000, $15,000 or $20,000 account and entitled to such and such a volume discount, too often taking the dealer's word for the volume without further proof. How often do they actually earn the discount given?

Or, in breaking into a town, the salesman finds the paint dealers who are really doing the business there, are buying at the lowest prices. In order for his prospect to compete (a dealer by the way, who is not one of the leading dealers, but whom he hopes to make one) he gives him his best discounts, believing the dealer must have them if he is to compete with the live ones and build a real business.

Unearned Discounts

Again, we have the dealer who earned his $10,000, $15,000 or $20,000 volume discounts some years ago, but who is not earning them today. Rather than take them away from him, and run the danger of losing him as a customer, the manufacturer continues to let him have them, even though his sales have fallen off a third or a half.

It is believed that steps can and should be taken to discontinue the practice of allowing volume discounts which are not earned. To allow them when volume does not justify, is defeating their purpose and is an abuse which it is felt should be gradually eliminated in the industry. If all refused to allow volume discounts not earned, none would be taking an unfair advantage and all would benefit in the long run.

In considering the question of correcting the abuses when granting special discounts, would it not be well, first, for us to consider those who are not operating on a retroactive plan but are granting discounts to dealers when not earned?

Second, whether they should not consider adopting the retroactive discount plan or some other which will correct this evil:

Third, whether the members of this trade sales group should not consider the possibility of the adoption of the classification of their accounts and discounts into three groups, as follows:

1. Dealer accounts with one discount for all dealers.
2. Jobber accounts with one discount for jobbers and a definition of what a jobber is, to be determined by the members of this group.
3. A distributor's discounts, with a definition by the trade sales group of what constitutes a distributor.

My suggestion in this connection would be that a distributor be defined as any account, we will say, in a large metropolitan trading area, whose business is primarily sales to painters, industrial accounts, hotels, office buildings, etc., and who may not sell to dealers.

I think it would be desirable for the trade sales group to give careful consideration to these suggestions and appoint a committee to study this matter and make a report to the executive committee of the association for their consideration and approval, when this committee may submit their final report to the trade sales group of the industry.

Why Certain Practices Should Go

"Why Certain Trade Practices Should Be Eliminated" was the title of a paper presented to the conference by William H. Jarden, jr., of the McCloskey Varnish Company, Philadelphia:—

The subject assigned to me, namely: "Why certain trade sales practices should be eliminated," ties up very closely with similar topics which have been discussed by previous speakers, so I shall touch but lightly on them.

In the course of business transactions, there often creep in certain practices which, at the time of their origin, were probably not considered improper or unfair but have proved so as time went on.

Business today has changed mostly for the better. The depression, coupled with the government's activities, has shown that individualism in business is due for extinction and that in its stead we must substitute what should always have been apparent, that business men owe certain obligations to their competitors and to their employees, and to the consumer.

We are concerned at this time with the matter of individualism in business, especially as to why certain unfair trade practices should be eliminated. There has been a general scramble to find ways and means of undermining posted price schedules, by devious and, in some cases, decidedly unfair trade methods. Instead of salesmen being engaged in selling paints and varnishes on their merits, they have been selling the dealer free brushes, unpainted furniture, lawn swings, clocks, rubber aprons, or "what-have-you"! To get these "free offers," the dealer has been obliged to buy some paint or varnish.

Our code seems to deal sufficiently on this subject, and it is well, as these selling methods were, no doubt, conceived without any thought of improper selling tactics but which subsequent events proved otherwise.

How many of us have stopped to realize the weakening effects of such methods of selling? Isn't it true that we ultimately lost sight of the fact that we were primarily selling paint and varnish, and, instead exerted our utmost ingenuity to find some new premium or some new "chiseling" feature that our competitor had not thought of before? It has lowered the sales morale, the selling force laying less and less stress on the merits of their paints, and the time came when the sales talk on the product lost its punch and effectiveness. So, it is a wise step taken by our code committee to disregard premium selling and get back to fundamentals.

In the future, therefore, let us not be led by will-o'-the-wisp selling methods; let us build more and more quality into our products, so that our salesmen can recommend their products on their merits.

"Free Deal" Brushes

In the matter of giving away brushes with the sale of paint or varnish, there may be excuses offered for this practice, some concerns feeling, and possibly rightly so, that they are not large enough to advertise through expensive printed mediums, but my contact for many years with the trade, tells me that it is not the smaller concerns who are indulging in "free brush deals," but the larger manufacturers. Of course, there are exceptions, but I sincerely believe that, in the main, the smaller paint and varnish manufacturers will be the gainers by the elimination of this expensive and highly questionable form of so-called advertising but which, to my mind, is nothing more than a method of chiseling the price schedule.

In addition to the above, there is also the one cent sale proposition. Every one of us knows that the true price of the one-gallon of paint or varnish has been doubled to the dealer to permit of selling the second gallon at one cent additional. The consumer, and probably the dealer, was falsely led into the impression that he is purchasing such a product at half price when you and I know that he is not.

Not only is this method decidedly unfair in trade practice, but the falsehood of such advertising methods can only react unfavorably on the trade as a whole. So, on both counts, this practice should be eliminated.

While the above unfair trade practices warrant total elimination, there is, however, this other trade practice, discussed by a previous speaker, which is of more serious import and that is giving away of rebates in order to coerce dealers to carry the complete line and thereby stifle competition. This practice is indulged in by the largest paint and varnish manufacturers. They tell the dealer, in effect, that if he buys a certain volume in the year, he will obtain an extra discount at the end of the year on his entire purchases during that period. As would be expected, the quota given to the dealer is plenty high enough; in fact the dealer realizes to make his quota and receive the extra discount, he must confine all of his paint and varnish requirements to that particular house and eliminate purchases from other sources of supply.

At least one large paint and varnish manufacturer recognizes the unfair and unethical features of rebates by now changing the rebate agreement to a so-called "contract" which, of course, will fool no one.

This is nothing more than a deliberate "squeeze out" of the independent paint and varnish manufacturer who does not have a complete line, and who, therefore, cannot cope with such obvious unfair competition, as no inducement they could give the dealer would make up for the loss of the year's rebate that the dealer would otherwise get from the complete line manufacturer. The dealer knows that he has had the screws put on him but, under the circumstances, there is nothing that he can do about it.

This phase of unfair trade practice has not been included in the various codes that have been prepared by our industry, but I trust that you gentlemen will see the wisdom of having the final code amended to take due cognizance of this unfair trade practice and thus eliminate the monopolistic tendencies of certain large manufacturers.

Wants Rebates Eliminated

Rebates, therefore, should be positively and unequivocally eliminated from our industry. Furthermore, in this particular practice, I should like to point out that, in the end, manufacturers who have resorted to these unfair methods have, in some measure, defeated their own purposes for, instead of eliminating competition, they have created more competition for themselves, by forcing the specialty line manufacturer into being a full "liner" as, for example, by compelling the varnish manufacturer to make and sell paint and other products.

Then we are confronted with the headlong dash into utter oblivion by certain manufacturers trying to make their products down to a standard instead of up to a standard to meet any and all price competition, until today, in certain metropolitan areas, the industry has almost descended to a racket.

To further digress for a moment and tell a little story, I think such manufacturers are dead ones, who probably don't realize it as yet. They remind me very much of the colored boy, passing through the cemetery and reading the inscription upon the tombstones. He came across one which read: "Not dead but sleeping." He scratched his head in puzzlement and kept repeating, "Not dead but sleepin'. Not dead but sleepin'. All I can say is, he ain't foolin' nobody but hisself."

Have we lost all sense of what the splendid men who have helped build up this industry have tried to place on a high plane? This insane desire to meet a competitive price is eventually going to destroy consumer acceptance of all paints and varnishes. We must remember that other industries are encroaching more and more on the elimination of paints and varnishes as protective coatings and, therefore, we must be cognizant at all times of our obligations to the rights of the consumer if we expect the consumer to keep on using paint, varnish and lacquer.

Selling on Merit

Also, isn't it about time that we got back to selling our paints and varnishes on their merit? Isn't it about time we try to have our products reflect the character of the men behind them?

The same money that has been expended on unrelated merchandise can now be used either to improve the quality of the products, thus giving the consumer more value for his money, or in building up lasting good will through the use of legitimate advertising media.

So many of us feel that we must do as our competitor is doing. We know in our hearts that the practice of free deals has benefited no one—even the consumer may labor under the impression that he got something for nothing. Why not assert our independence of this and similar methods rather than follow the leader, as it were? Certainly any benefit gained by these methods is soon lost as competitors soon take up the same deals.

Such selling methods indicate, to my mind, the inability and lack of confidence in their products which must exist in the minds of the sales departments of such concerns.

Business competition can be conducted along clean and fair lines. In fact, it must be if I interpret properly the utterances of our public officials.

(Continued on page 41)

Research in the painting of wood forms a part of the general program of the U. S. Forest Products Laboratory to aid in protecting and enhancing the value and marketability of forest products. Extension of the market for wood likewise extends the market for products of the paint industry. The special point of view from which wood painting research is directed at the Forest Products Laboratory has proved particularly fruitful in supplementing the research on paint materials and products conducted by the paint industry. The Forest Products Laboratory is a part of the Forest Service, U. S. Department of Agriculture.

For particulars, address:

DR. F. L. BROWNE, *Senior Chemist*,
U. S. Department of Agriculture,
Forest Service—Forest Products Laboratory,
Madison, Wisconsin

PROCEEDINGS OF THE
National Paint, Oil and Varnish Association
FORTY-SIXTH ANNUAL CONVENTION
Chicago, Ill., October 30, 1933

Monday, October 30

Opening Session, Monday Afternoon

(The forty-sixth annual meeting of the National Paint, Oil and Varnish Association was called to order in the Edgewater Beach Hotel, Chicago, at 2:50 p.m. October 30, Samuel R. Matlack, president of the association, presiding.)

President Matlack: It give sme great pleasure to call the forty-sixth annual convention of our association to order.

Tribute to Mr. Horgan

There is one matter of business that I feel this body should take up first. Since our last meeting we have lost our general manager, and his absence is felt very keenly. I think it would be fitting, in honor of George Horgan, if we were to each stand for a moment in silent prayer in memory of our departed friend.

(The audience arose and stood in silence.)

President Matlack: The first order of business to come before us is the rollcall.

Mr. Shannon: We will call the roll by clubs, and as each club is announced, we would appreciate it if the delegates would please stand so that we may get a record of the attendance.

(Mr. Shannon called the roll, showing the following clubs in attendance:)

Atlanta (Mr. Shannon: Mr. Figgis has the proxy for the voting of this club. Is he present? Mr. Figgis: I wasn't aware of that fact.)

President Matlack: Will any members that hold proxies let themselves be known as the clubs are called?

Mr. Shannon continued the roll call.

Baltimore	2
Buffalo	2
Central New York	0
Chicago	3
Cincinnati	6
Cleveland	2
Columbus	1
Colorado	2
Detroit	2
Golden Gate	1
Indianapolis	1
Kansas City	1
Los Angeles	1
Louisville	2
Memphis	1
Milwaukee	2
Minneapolis-St. Paul	0
Nebraska	1
New England	5
New Orleans	0
New York	12
Philadelphia	5
Pittsburgh	4
Portland, Oregon	1
Puget Sound *Mr. Shannon: Mr. Matlack you have the proxy for that.)	
Richmond	3
St. Louis	0
Savannah	0
Toledo	0
Toronto	3
Utah	0
Washington	1

Mr. Shannon: Are there any individual members present who do not belong to paint clubs? If so, we would be glad to have you stand.

Reception of Delegates

President Matlack: While Robert is counting the delegates to see where we stand, we might entertain the reception of the delegates of the National Association of Paint Distributors. If the four members present who are representing the distributors are in the room, I think it would be nice for them to rise. George J. Michel, of Pittsburgh, will represent them at this meeting. Are the other members present? We will be glad to hear from you, Mr. Michel, if you will come forward.

National Association of Paint Distributors

George J. Michel: On behalf of the National Association of Paint Distributors, it is a pleasure to bring you their greetings and good wishes.

The paint distributor has suffered during this depression, and it is our aim to work closer with our principals in the industry. We wish you a successful convention, and it is our desire to give you the co-operation of our organization during the coming year. Thank you.

President Matlack: I wish to thank you, Mr. Michel, for being with us this afternoon. We hope the other three members will also feel free to join us in the meeting.

The reception of delegates from the International Society of Master Painters and Decorators, represented by John B. Dewar and E. J. Bush. Mr. Dewar is authorized to speak for the delegates. Gentlemen, I would like to introduce to you, Mr. Dewar.

International Society of Master Painters and Decorators

John B. Dewar: Once again I have the privilege of extending to your organization, and also to your annual convention, the greetings of the International Society of Master Painters and Decorators, and the personal greetings of our international president, Mr. Grant, who unfortunately is not able to be present.

In the last year, many things have happened to our organization; I believe also to yours. We have been particularly involved in the NRA, and we are happy to inform you that the results of this act already have influenced our organization tremendously. We see in this act, and our membership all over the United States sees in this act, a means of overcoming the terrific competition we have been up against in the past few years, and a means of putting our business on a profitable basis, so that we can use your materials more, and help the save the surface campaign in a more profitable way.

Only within the last several months, I presume, we have added fifty new chapters to our organization. Our secretary has issued thirty charters and about twenty are about to be issued very shortly. We have more than doubled our membership, and we estimate that, at the present time, it may approximate ten thousand. It is rather difficult to give the figures, the exact figures, because new chapters and the organization is increasing day by day at a tremendous rate of speed.

We feel we are already getting the benefits of the new deal.

We attempted last year to put through a reorganization plan, for which we begged your assistance, and we already see the benefits of that reorganization plan now through the NRA. We desire especially to co-operate with your association, and indeed with your new association. We have tremendous problems on both hands, and only by complete co-operation can we achieve the benefits for the industry that we seek.

We, of course, have had some difficulties, but our difficulties can be ironed out very easily. I believe there is now a very close bond of friendship between the two associations, and with closer contacts, and especially with your new association, I am sure it will be productive of a very great amount of benefits.

I have enjoyed myself this past year meeting with some of your committees. They have been most instructive, and they have also been productive of results. I wish you success in this convention. I wish you success in your new plan of organization, and I invite you to our fiftieth anniversary convention in New York next Winter, in February. Thank you.

President Matlack: Mr Bush, have you anything for us?

E. J. Bush: Mr. President, I can only add to Mr. Dewar's good wishes for you, and at this time to extend appreciation to the manufacturers who are members of our organization for their intensive work in bringing out the advantages of membership in our organization.

You are celebrating your forty-eighth anniversary. We are going to celebrate our fiftieth. We are a little bit older than you are. We want you to come to New York to help us with our golden jubilee. I hope that the relations that exist between us will continue. I was talking to Mr. McFadden a while ago, and I have his assurance that we are going to get just a little bit closer than we have ever been before.

Amalgamation

President Matlack: Thank you, Mr. Bush.

We have at the present time two-thirds of our voting membership in the room. I would suggest, if it meets with your pleasure, that we take up the report of the amalgamation committee at once. What is your pleasure?

Mr. Roh, are you prepared to give us that report at the present time?

Mr. Roh's Remarks

Charles J. Roh: I think most of you gentlemen were in the room this morning when I made the report to the manufacturers' association. With your permission, I will brief it now rather than read the entire report. Is that satisfactory?

For the few members that weren't here I set the background for this amalgamation by stating that this is not a revolutionary idea, that it is the focusing point of an evolutionary idea that started ten years ago when we had our association activities centered in several cities in the country.

I also stated that there has been criticism by the membership of both organizations in the present set up, showing that there was very great overlapping, and that present day needs required one cencentrated authoritative body to act for the membership. The answer to that demand, to that present day need, is this report of the amalgamation committee. I read the names of the membership to give you an idea that they were representative of the industry, and considered

Samuel R. Matlack
The Presiding Officer

all the angles before finally perfecting this report, which was submitted, resubmitted, and then resubmitted again, and finally got the approval of three bodies, the executive committee of your association, the board of directors of the American Paint and Varnish Manufacturers' Association, and the educational bureau. After they got through with it, this is the result.

The report itself, of course, designates a name. At first, I want to state that the amalgamation committee recommended as a basis for the reorganization, the by-laws of your organization. They suggested that the name be changed to the American Paint, Varnish and Lacquer Association, Inc., rather than the National Paint, Oil and Varnish Association. They also in the association decided it would be of great benefit if the manufacturers had one set and one type and one class of dues, that there weren't two types of dues to pay in different localities for national dues. They are termed Class A members. The scale of dues I will tell you about a little later—perhaps I had better tell it to you now.

Explanation of Dues

It is based in the same way, and the same basic figures are used that were adopted three years ago at Toronto. I might tell you that all the manufacturing members, and all the subscribing members—not all, but ninety-five percent of all the members—under this new scale of dues will pay no more and in many instances they will pay less for association dues. In other words, I want to state specifically that if you are a member of the manufacturers' association and hold several memberships in various localities, in city or regional clubs, and subscribe to the educational bureau fund, the sum total of those amounts will, when reflected in your present dues, be the same, or less, with the exception of about five percent of the members.

I know you have in mind that scale of dues, so I won't read the entire scale. I had a little difficulty in doing it this morning. I want to say this: That it was the unanimous decision of the committee that those manufacturers selling a million dollars or less be encouraged to join by reducing the scale slightly in the brackets that are under one million. In other words, there are six brackets that are slightly under the scale established for those manufacturers that sell and distribute a million dollars or over. That is as far as the manufacturers go.

Your own association, the N. P. O. & V. A. had two classes of members. As you know, there are a number of manufacturers that now subscribe to the educational bureau fund, and to provide for those who are willing and feel that they would like to support those activities, we have provided what we call class B members. Those members pay dues on a scale which is a few dollars under the scale that manufacturers pay; and the sum total of the number of people that have been paying will also pay slightly less, or in very rare occasions only slightly more, but in no case is it an important amount. In ninety percent of the cases, it will be slightly less.

The class C membership are those members who are not class A or B members, and who will secure their membership in the national association through membership in the local, regional, or city associations, and they will pay, as they now pay, $20 a year toward the national dues.

We then have class D members, for the Canadian membership. There was a recommendation made this morning that I think can be adopted tomorrow, and probably will, because I think we all feel that we want Canadian members, and we don't want to put anything in there or in their path that will indicate in even the slightest way that they are not wanted for full membership. So it was suggested that in all those brackets under $50 that apply to the United States members, that that be given to the Canadian manufacturing members.

Associate members in Canada have always been on the $10 scale, and that is continued in the new recommendation.

The fifth class, the Class E members, are the honorary members. It is the recommendation of the committee that those members that are now honorary members of the two associations and the educational bureau be continued as honorary members of the new association.

Two Big Committees

One of the big advance steps (I consider it such from my own standpoint as a manufacturer), one of the biggest things we are contemplating, one of the things that is going to bring results, one of the things we have been unable to accomplish in the past, is the creation of a set-up of our various committees. It is recommended that two big committtees be formed to operate from the national office. The set-up of the two committees —one on trade sales and the other on industrial sales of paints, varnishes and lacquers—will permit the complete reorganization of manufacturers in any locality, and in any line of trade or industrial sales. The tie-in between the national office and the local or district association or the regional or city association will be through a chairman of a trade sales committee and a chairman of an industrial sales committee, who will be a member of the national body. He will be selected by the chairman of the national executive committee, and the President of the Club.

It is the intention that they hold quarterly meetings, the same as the executive committee, as provided in the by-laws, and that those reactions will be brought continually to the executive committee. In other words, if we had had such a committee in the last six months, we probably would have avoided a little embarrassment—I cannot say it is embarrassing, because I think all of those things have brought about a clearer and better understanding of each other. But this will set up the machinery so that in a very short time, local reactions in reference to all branches of the industry can be brought into national headquarters.

The recommendation provides that secretarial service be rendered to those committees, and there will be an accounting of those committees to the national office. In other words, here is the set-up that is functioning from the fountain head, and local, regional reactions will be the force of crystallizing these national aims of the industry in all branches.

I might cite here that the lacquer manufacturers, for instance, could crystallize their thoughts in the various centers of the lacquer industry in the country; the manufacturers of paint, and the manufacturers of varnish could do the same thing, either in trade sales or industrial sales.

There are other committees that are recommended here that I read about this morning. They are the same working committees.

It is felt, first, that we should start with these two main committees, and then as the need develops in the industry, perhaps other committees will want to be organized in the same way. I have two or three in mind that have been seeking just such an outlet. If their demand is of sufficient force, there is absolutely no reason why we may not have any kind of a group representing any division of the industry to bring the same kind of local reaction to the focusing point at the national office.

Overlapping of Direction

I said this morning that there had been considerable discussion with reference to the overlapping of the directing heads of the two organizations, and particularly the place that the educational bureau would fit into the picture. To answer all the criticisms in reference to that set up, it is the recommendation of the amalgamation committee that we have a president and a vice-president, five regional vice-presidents, a treasurer, and eighteen elective members of the executive committee. There will be three classes in those eighteen members. At the first election, six will be elected for three years, six for two years, and six for one year, and each year thereafter, six will be elected to this committee. That will insure all the benefits of continuity which is so valuable in the association, and which, after all, has been the great function of the educational bureau. As directors and executive committee came and went, the educational bureau insured continuity of efforts in the long pull developments. The idea in this set up is to continue that long pull development of our industry.

I said this morning that this question of amalgamation has been a process of ten years, and I could show you step by step where groups have been constantly working to bring this activity under the direct cloak of the organization. Unless we preserve that in our original and official set up, we will be giving up something that has been very valuable to us. Whatever we may say about them, that is one thing that we should continue.

In other words, six new members coming into the picture will have the benefit of the experience of those older members on the board.

The set up as to the selection of a chairman and vice-chairman is routine.

I think I have given you in a few words the entire report of the amalgamation committee.

This morning, there was a little slip-up in reference to certain resolutions that were presented from the floor. In view of the fact that there is certain routine that we have to go through, that if we could consider these resolutions now with a quorum present, or two-thirds of the membership present, I think it would be well to do so. I don't mean to imply by that that there is any idea of railroading.

If there is anyone that wants to ask any question about the amalgamation committee's report or action, or the reasons why they did certain things, if I can't answer it, some other member of this amalgamation committee certainly can do so. If there is any legal slant that anybody would like to get any idea on, I am sure Mr. McFadden or Mr. Macdonald can do that.

If we are going to consider it at all, I would like to present these resolutions and have you act on them the way you want to, except that it seems to me that both have to do with the same thing, and I would like to see them considered at the same time.

Resolution to Dissolve

Mr. Roh: And so, Mr. President, I offer the following resolution:

Whereas, this association agrees in principle with the report of the amalgamation committee recommending the dissolution of the National Paint, Oil, and Varnish Association, Inc., and the American Paint and Varnish Manufacturers Association, Inc., and the creation of a new association to succeed said associations; and

Whereas, the American Paint and Varnish Manufacturers Association, Inc., is considering dissolution of that association and the conveyance and transfer of its property to a successor association if and when such successor may be incorporated; and

Whereas, it is proposed that a general meeting of the industry be held at 9:30 a. m. on October 31, 1933, to discuss and act on the details of a plan to create such successor corporation, such plan to be submitted in a report of the constitution and by-laws committee; now therefore be it

Resolved: That subject to similar action by the American Paint and Varnish Manufacturers Association, the officers and directors of the National Paint, Oil and Varnish Association, Inc., and/or their successors, and each of them, be and they are hereby fully authorized and directed to take, as soon as may be, all appropriate and necessary action to surrender the charter, corporate name, etc., of the said association, and to dissolve the same.

Resolved further, that subject to the adoption of a plan of organization and by-laws for such proposed successor corporation by the said general meeting of the industry on October 31, 1933, or any adjournment thereof, the officers and directors of the National Paint, Oil and Varnish Association, Inc., and any committee or committees thereof, and/or their successors, and each of them, be and they are hereby fully authorized and directed to take, as soon as may be, all appropriate and necessary action to transfer and convey any and all property of said association to such successor incorporated association when it is created and organized in accordance with law, and to do all things necessary to carry into effect all resolutions applicable to the dissolution of this association and the organization of a successor corporation, heretofore or hereafter adopted at this meeting.

Provided, however, that, pending the transfer and conveyance of property, rights, and assets of the National Paint, Oil and Varnish Association, Inc., or any committee or committees thereof to the National Paint, Varnish and Lacquer Association, Inc., the title to such property shall be and remain in the said National Paint, Oil and Varnish Association, Inc., and the finances and expenditures of such association shall be directed and made in accordance with its constitution and by-laws as at present.

Provided further, that the action on any proposal to provide for a successor association shall be taken only on the votes of members of the National Paint, Oil and Varnish Association, Inc., in good standing, who shall vote by delegates, and of the American Paint and Varnish Manufacturers Association, Inc.

I want to emphasize again that any question in reference to the amalgamation, the members of the committee will try to answer; and any question in reference to these resolutions, our attorneys will try to answer.

President Matlack: You have Mr. Roh's resolution, also the report. Do you first want to act on the report and then the resolution, or all at the same time?

Mr. Walker: I move that the report of the amalgamation committee be received, and the resolution adopted.

President Matlack: You have heard the motion. Do I heard a second?

Ernest T. Trigg: I will second that.

President Matlack: You have heard the motion and the second. Are there any questions? Any discussion? Are you ready for the motion?

(The question was called for.)

President Matlack: That will have to be done by rollcall. Mr. Shannon called the roll with the following result:—

Dissolution Roll Call

Club.	Votes.	Yes.	No.
*Atlanta	..	x	...
Baltimore	20	x	...
Buffalo	20	x	...
Chicago	90	x	...
Cincinnati	40	x	...
Cleveland	40	x	...
Colorado	20	x	...
Columbus	10	x	...
Detroit	40	x	...
Golden Gate	20	x	...
Indianapolis	20	x	...
Kansas City	20	x	...
Los Angeles	20	(Not voting).	
Louisville	20	x	...
Memphis	10	x	...
Milwaukee	20	x	...
Minneapolis-St. Paul	20	(Not voting).	
Nebraska	10	x	...
New England	60	x	...
New Orleans	20	(Not voting).	
New York	170	x	...
Philadelphia	50	x	...
Pittsburgh	20	x	...
Portland, Oregon	10	x	...
Puget Sound	10	x	...
Richmond	10	x	...
St. Louis	50	x	...
Savannah	10	(Not voting).	
Toledo	20	x	...
Toronto	30	x	...
Washington	10	x	...

* Mr. Figgis has the proxy.

Mr. Shannon: It is unanimously carried, and the two-third delegates are adequately represented.

President Matlack: I suppose we are within our rights to accept the report of that committee and vote on the resolution at the same time. Therefore, the report is accepted and the resolution carried by unanimous vote.

Mr. Roh: In the event the American Paint and Varnish Manufacturers Association votes as you have voted this afternoon, it will be necessary to have this resolution—

Mr. Everett (interrupting): I just want to correct you. I think the report was received and the resolution adopted.

President Matlack: That is what I meant to say.

Mr. Everett: You said that the report was accepted and the resolution adopted. I want to be sure the minutes read right.

President Matlack: Thank you very much, Mr. Everett.

Mr. Roh: If the American association takes similar action to what you have taken here this afternoon, tomorrow morning it will be necessary to have this resolution in our records:—

Resolved: That upon the dissolution of this association, all matters pending before and not disposed of by the Executive Committee and Board of Directors shall be referred to the Executive Committee of the National Paint, Varnish and Lacquer Association, Inc., for appropriate action in accordance with the constitution and by-laws of that association.

I offer that resolution, Mr. President.

President Matlack: You have heard the resolution offered by Mr. Roh. What is your pleasure?

(The motion was seconded by Mr. Marks.)

President Matlack: It has been moved and seconded. We can vote on this by a majority vote. Are there any suggestions or questions or discussion? Are you ready for the motion? All those in favor please signify by the sign of "aye." It is so carried.

We will go back now to the regular order of business. I will ask Mr. Bownes to take the chair.

(Frank Bownes assumed the chair.)

Chairman Bownes: Members of the National Paint, Oil and Varnish Association: Will you kindly give your attention to our president while he presents his annual address?

Address of President

President Matlack: Fellow members of the National Paint, Oil and Varnish Association: Whether it is in the by-laws or precedent, I do not know, but we are required before escaping from a very pleasant year to offer a resume as to what has gone before us.

Just a year ago my predecessor, in turning over the presidency of this association, likened it unto a ship, with a brand new coat of paint, its brass shined to the nth degree, flags proudly flying and headed for the open sea. So I have taken the liberty of following in like manner and will try to present to you some of the highlights as they have been inscribed in our log.

Once more our ship of business has returned to its home port and again the captain and his crew of officers and men are called upon to render an accounting of their stewardship.

It has not been an easy journey, this voyage of the year just past. Our good old ship shows plainly the scars of battle. Some of its sails are torn. But the old hull is still sound and the flag of our association still waves undaunted from the topmast.

Seas have been rough. Storms have been plentiful. Unseen shoals and reefs have menaced us on every side. The channels have not been clear ahead. Many times the new, uncharted water has been too deep for our sounding lines. Some of the old, familiar landmarks have been swept away. But by Divine guidance and the grace of faith we have come through.

Let me retrace with you some of the pages of our log. Go back with me to our forty-fifth convention. Let us look over the weather chart at the time our fair ship started forth.

Resume of the Past

Those were dark days. The skies were laden with threatening clouds. Our people had done with the political philosophy that had been in power and that was to remain in power for a little longer. The election had been decided, but Inauguration Day was still four months away. There still remained some seventeen weeks before the newly chosen organization would take over the reins of government. And what might happen in the meanwhile? What was the outlook? Would the old party in power, disgruntled with its defeat, still further clog the paths of progress?

Millions of people were out of work. The army of the unemployed was growing larger every hour. Labor at every point was seething. Would it burst into an infuriated conflagration? There was a long, dark, drear Winter ahead.

Bank after bank was closing its doors. Personal savings were being swept away. Millions of dollars in assets were frozen or had shrunk to but a minor fraction of their reputed former worth. Industry was slack. Judgments were hesitant. Plans were well nigh impossible and predictions as to the future were either vague or out of the question.

Purchasing power had shriveled. Credit was strained to the breaking point. Credit men and credit departments were turning mental handsprings. Past records that had once been the measure of past responsibility meant nothing. Who knew what anyone was worth? And such orders as came into our famished factories were just as likely to prove liabilities as assets.

At home our government was calling for a balanced budget. Abroad our foreign debtors were repudiating their debts. The entire world was in the grip of frenzy.

And then we come to Inauguration Day. The dawn was just the same as any other dawn. It was the final day of the week. The last hours of a passing party were ebbing away. At noon a new President would be installed. An entire country, in mood for inaugural celebration, was waiting in expectancy, when, without warning, came a flash of devastating news. Throughout the entire nation the banks had closed. Incredible! Men looked at one another, aghast. A record-breaking event, the like of which the world had never witnessed, and that you and I and succeeding generations may hope never to see again.

Hope dashed into despair. Joy turned into chagrin. Celebration converted into almost lamentation.

A new President stepped into a deserted factory at the very instant of a complete shutdown, faced with the necessity of beginning a new week, an early Monday, with questionable facilities to start with and the better part of the public's pocketbook tied up.

The New Deal

Call it a new deal if you will, but it went further back than this. It was practically a new deck of cards and a new shuffle thrown in, a beginning from a beginning.

Congress was called to special session. There were more days of waiting, more days of uncertainty. Gradually our bankers came out of the holes to which they had so hastily retreated, and the situation became a little brighter. Then came a clarion call for courage, tolerance, action.

A master mariner in the White House was mustering his forces. The executive mansion was changed into a lighthouse. A beacon soon began to cast its welcome beams over the storm-tossed waters and on the business crafts that were veering near to a surf-lashed, rockbound shore that spelled ruin. Our ship and a hundred and one other ships of business came to a level keel once more. There was daylight, hope, ahead.

Action was what the President asked. He gave us action in return. The sky began to clear. Bill after bill, designed to give relief, began to follow one after the other. And here was another record, a record for speed in legislation that no government has equalled.

Then came another shock to our association. From out of that vast unknown from whence no traveler has returned, the Mighty Hand that rules the universe and guides the destiny of puny man reached forth and beckoned homeward our ship's chief engineer. And so our log is not without its tinge of sorrow and sadness. A man whom we have cherished and shall miss has gone to his last long resting place, and, on that log, in loving memory, is inscribed the name of George V. Horgan, died in action, buried at sea, a veteran in every sense of the word, closely connected with our industry for over twenty years, first as secretary of the National Paint and Varnish Association, later as general manager of our combined associations, loyal to the last, his last detail of business being his appearance before the congressional hearings of May 5 with reference to labor. He passed away May 25.

It was Omar Khayyam who said:

The moving finger writes and having writ
Moves on. Nor all thy piety or wit
Can lure it back to cancel half a line.
Nor all thy tears wash out a word of it.

George V. Horgan is gone, but his memory will long remain.

It is also our duty to place on record in the log the death of a loyal past president and a vice-president, R. B. Robinette.

So far I have dealt mainly with our trials and tribulations. But what about progress? What have we accomplished? What about results?

Progress Achieved

Let me first point out to you the work of our traffic committee and its successful efforts to have less-than-carload paint and varnish shipments dropped from third to fourth class classification. This change became effective early in our present fiscal year, so that for the past several months, as a tangible evidence of this fine work, members of our association have been enjoying a saving of approximately twenty-seven per cent in their less-than-carload freight charges.

Now let me briefly summarize the results of the scientific section. In the past few years our industry has been subjected to all sorts of competition. We have had to face tremendously difficult economic conditions. The market has demanded the utmost quality at the very minimum of price. And it has been our scientific section that has helped us meet this demand and these conditions by discovering new products, new pigments and solvents, and by showing us more efficient methods of manufacture and finer methods of application. The truth is that this department has stood shoulder to shoulder with us in every possible way in which it could be of service, and if my comments here may seem all too brief it is only because the work of this department is too complex and too voluminous to discuss thoroughly in what must perforce be confined to merely a president's parting report.

Now let me turn the spotlight upon the save the surface committee, and the able way in which this committee has functioned throughout the year. It has given us the maximum value from a rather limited appropriation, and has procured for us a vast amount of profitable publicity. Its save the surface slogan has lost none of its effectiveness, and is still carried on as one of the best known slogans in the field. The program of this committee, calling attention to the rapid depreciation of property at this time and the urgent need for and wisdom of using paint, has been a most constructive work.

Right here also it seems fitting to cite the fine work of our clean up and paint up committee operating under the management of Dr. R. A. Plumb. This committee needs no eulogy from your president. Its efficient operation and the conscientious and thorough way in which it has done its duty is proverbial. It has a constant record for making good.

Nor must we forget here the budget committee, a committee that has done yeoman service without any great display of ostentation, but that nevertheless has enabled us to carry on and live within our means through a most trying period.

Renovize Campaigns

And now a word or two about our renovize campaigns. These campaigns, in most cases working against tremendous odds, have shown results that have been most gratifying. I can speak from experience regarding this part of our work because I have had the benefit of first-hand knowledge from my own home town, the city of Philadelphia.

The response from the people of this city to our efforts was extremely interesting, and the sums pledged to paint and varnish (with the labor required to apply these protections) totalled over $4,000,000.

It was hoped to carry this fine work into a nation-wide campaign, and every effort was made to do this. Presidents and vice-presidents of various great railroads east and west lent their willing support to this movement. Various utilities companies, bankers, chambers of commerce and other industrial and civic leaders were also active. In addition to these, the firm of Day & Zimmerman, one of our country's leading utility experts, very generously contributed the services of one of its vice-presidents, Charles Penrose, to our cause, but the concerted campaign did not materialize, owing chiefly to financial conditions that then existed in practically every city in the land.

Do not lose sight of this fact, however: —While the national campaign lagged, the local campaign conducted in many cities did go along in fine shape, and the result of these campaigns was very satisfactory.

Visits to Clubs

It has been my pleasure and privilege to have visited a number of our member clubs this year, and I want to remark right here and now that the sincerity of purpose and the fine morale that existed at these clubs have been noteworthy. Membership has lagged a little. This was to be expected in face of the existing conditions, but any loss that may have occurred in numbers has been made up in the vigor, enthusiasm and earnestness of the active members of the clubs in question. These men have shown a keen appreciation of the value and the help of our national association. I should like to express my appreciation of the genuinely fine way in which these clubs have received your president and of the fine spirit of co-operation and loyalty they have exhibited. I also want to express

my sincere thanks to the many committees of our association. Never could any captain have had a more loyal crew or a more loyal set of officers.

And now, if I may, I should like to retrace my steps a little and get back to that portion of our log that deals with events of the early summer.

It is late May and the early part of June.

Thomas J. McFadden is now our temporary manager and has just taken over his new duties at national headquarters. He is snowed under with work, but slowly and surely digging his way out. There are a thousand and one details of office routine to be given attention, and then comes an avalanche of work.

Just a few squares away from our headquarters a master man, sitting in the White House, is working ahead, full steam, setting a record, an unbeatable record for action. Things are happening thick and fast, and our government's viewpoint toward business is undergoing some serious revisions. The President has asked every industry for a code.

Heretofore, the government's policy toward business has been "hands off," and the Sherman law has frowned sternly upon any effort of business men to get together. Agreements between competitors have been taboo. Now the government is reversing itself. Get together and trade agreements have become compulsory. The national recovery act has been born.

This means added work for national headquarters, work with a vengeance, work that requires diplomacy and tact, work that demands almost constant contact with the government and government officials. All this and more is in the hands of Mr. McFadden, part of his daily labor, part of his ever-increasing problems, and right here, in the crucible of experience, Mr. McFadden wins his laurels and earns the title of general manager.

This, gentlemen, is the type of man who presides at national headquarters today, and because he has won the loyalty and full support of every person within his own immediate organization it becomes evident that he deserves your full support as well.

I find a line from Milton is applicable:—"He also serves who only stands and waits." Surely no general is greater than his army, and Mr. McFadden, with his loyal corps of workers at headquarters, is worthy of the finest tribute that our association can pay to him or to them.

The Code Committee

And now that we have reached that portion of our log that deals with the code, let me tell you something of the committee that framed our code. It was made up as follows:—Three members of the National Paint, Oil and Varnish Association, three members of the American Paint and Varnish Manufacturers Association, and three members of our educational bureau, under the leadership of our educational bureau's chairman.

Now it is not my intention here to enter into a lengthy discussion or description of the vast amount of work and detail that confronts the builders of a code, especially when the various businesses that are to participate in that code are located all over the country. But this does afford me the opportunity to pay tribute to a man, a member of our association, who has very ably given us an example of the stuff of which great organizers are made. I am referring now to Ernest T. Trigg, chairman of our educational bureau.

For over five months Mr. Trigg has literally lived with this code. He has personally traveled thousands of miles and given his devoted, undivided attention to the building of our code. It is through his loyal efforts and concentration to this task that it may be said to the everlasting credit of our industry that we have a code, that we were among the first to answer the President's request for a code, that we were among the first to honor and adopt the national recovery act and the blanket code which the President laid down, and we were among the first to put its provisions into operation. Thus, in every way, we have proved our reputation of living up to cooperation, constructive cooperation, and we have measured up to the ideals which in a former year earned for our association the great bronze plaque that now graces the walls of our headquarters.

Unquestionably, the man responsible for the code should be the man to give you the facts regarding that code. Mr. Trigg is that man. I can only add that if this code is lived up to as religiously and as conscientiously and as faithfully as it has been drafted, it will in a full measure go a long way toward helping us in the realization of our simplification and standardization program, and it will correct practically all of the evils and abuses that, from time to time, have so seriously disturbed our industry.

I should like to add further that this code and your association is now your only haven of refuge for the future, for the government has clearly stated that it will deal only with the trade associations and not through or with the individuals of those associations. Furthermore, that association must be representative of the industry and fully representative of the people that it represents.

Truly this code binds us more closely together than we have ever been in the past. Truly it stands for the common interest of all. It represents and calls for cooperation to the Nth degree.

It does more than this. It crystallizes the efforts and ambitions of our association into a tangible entity. It gives each member something that he can see and feel and read. It gives him a concrete evidence of what constitutes ethics and proper practice. It gives him a definite reference to which he may refer when in doubt, and it helps remove some of the selfishness and narrow-gauged principles that often exist.

The day of "every man for himself" is sinking into decline. We are beginning to learn that only in union is there strength. This great truth is the keystone of our country, the foundation of the national recovery act, the keynote of our association. We must all do our part.

Power of Association to Aid

Man cannot live for himself alone. There must, on every hand, be a broader, deeper realization of this fact. There must be a keener appreciation among ourselves of the competent, consistent, constructive helpfulness that this national association holds out to every last one of our members. There must be a keener appreciation of the vast and comprehensive wealth of material that our association is in a position to supply. There must be a closer bond of relationship between all of us in order that our association may function to its top-notch of efficiency and accomplish to the utmost the things that it has set out to accomplish.

We have an association prepared and equipped to do things. We have an association that has a record for having done things. And we have at the head of this great government of ours a man who has the common touch, the understanding, the will to do his utmost. He has shown his skill and ability in his many radio reports to his great mass of followers. You may disagree with his theories of political philosophy, but you cannot afford to disagree with his efforts to set our country to rights.

The period of business complexities is not yet ended. There has been some relief. There will undoubtedly be more relief. We see indications of progress every day. But the time for great rejoicing has not yet arrived. This is not the time to lay aside the plow and pick up the bugle. This is not the time for relaxation. Let us first completely finish the important work at hand. Our greatest help now is to use the experience we have gained in the nearby past and to apply that experience to solving our problems of today in such a manner that the faults that have occurred shall never occur again.

I ask our association for the fullest measure of consideration and cooperation, and I thank its many members for the honor of having permitted me to work with them and for them during the past twelve months.

We have ridden through many storms together. We have had our pleasant days and others that were not so pleasant. We have sometimes had to stand with our backs to the wall. But if we have learned no other lesson, we have at least discovered, to use a slang and sporting expression, that we can "take it." As for the future, there is no fear but that we will have the faith and common sense to "make it."

And now, my friends, the hour has come for me to lay aside the helm and step from the bridge. The reading of the log for 1933 is finished. Another chapter has been added to the annals of our association. The good old ship that has so ably served her purposes in the past forty-six years is about to be laid away in the peace and quiet of Sailor's Snug Harbor. In a few months she will have become nothing but a memory.

But I have another duty to perform before I finish.

The New Venture

Mine is the double honor of having been your president and of having had this opportunity to bid you welcome to the christening and launching of a brand new ship, a finer, greater vessel, the merging or blending of two fine organizations into one. It is such a ship as must have inspired the immortal Longfellow when he penned his Building of the Ship:

> Build me straight, O Worthy Master!
> Staunch and strong, a goodly vessel,
> That shall laugh at all disaster
> And with wave and whirlwind wrestle.

To the many members of our association and to the number of friends that we have with us here assembled, some of whom have journeyed many miles, I extend the hand of good fellowship and a hearty welcome. We are immensely happy to have you with us. We sincerely welcome you to this glorious concerted rally for progress and achievement in the name of our association.

The good ship stands ready. I hear—

> The sound of hammers blow on blow
> Knocking away the shores and spurs.
> And see! She stirs!
> She starts, she moves, she seems to feel
> The thrill of life along her keel.
> And spurning with her foot the ground,
> With one exulting, joyous bound,
> She leaps into the ocean's arms.

In a few short hours she will head for the open sea with newer officers and a newer crew, with newer hopes and newer ambitions. I see at the top mast the flag of a greater association, the ensign of our National Paint, Varnish and Lacquer Association.

She is a bonny ship with a gallant crew, and to her and them I wish Godspeed, a fruitful voyage, a triumphant return.

> Thou too sail on, O ship of state.
> Sail on, O Union, strong and great.
> Humanity with all its fears,
> With all its hopes of future years,
> Is hanging breathless on thy fate.

Thank you.

Chairman Bownes: I will accept a motion that this very splendid, instructive, and interesting paper be made a part of the records of our great association. What is your pleasure?

Mr. Trigg: I think we all hesitate to offer such a commonplace sort of a motion to that stirring address so beautifully worded and so well delivered. I think it is entitled to something more than that. I myself feel very much stirred by it. I do want to make a motion, that we accept this report of the president and make it a part of our records, with our very sincere appreciation to President Matlack not only for his work, but for this very fine address which he has made to us today.

Chairman Bownes: Thank you very much, Mr. Trigg.

(President Matlack assumed the chair.)

President Matlack: The next regular order of business is the general manager's report. Thomas J. McFadden.

General Manager McFadden: You have such a long and important program, the general manager will report very informally and very briefly. I don't know that he could do otherwise after having listened to such a complete resume of all the association work, including the references to the committees, the staff, and the code commitee, as has just been presented by your president.

I have been asked to announce that the general industry meetings of tomorrow and Wednesday are open sessions to those who wear badges indicating that they have taken care of the formality of paying a nominal registration fee.

President Matlack: Owing to the fact that we sent out three thousand invitations to attend these meeings, telling them that they were welcome to all of our sessions; also, at the Chicago Save the Surface Men's Club the other night, I invited their membership to be present with us, especially on Wednesday, I do not feel it would be good policy to lay down a hard and fast rule that it will be necessary for them to pay and wear the badges. I

Thomas J. McFadden
General Manager

hope, however, that as many as are here and are staying for the week, will feel that the program is worthy of a very small registration fee.

General Manager's Report

General Manager McFadden: I am glad to have that correction. I was referring to a message that was sent up to me. I suppose I should have checked to see whether or not there were varying views about it.

Apparently, then, there will be no checking at the door, but we do call your attention to the fact that the registration fee is very nominal, and it is very necessary that we all contribute so that the expenses of the convention will be fully met by those in attendance.

The association headquarters has become a code factory. That means that in addition to carrying on their respective duties, the various department heads have all pooled their resources to help in the interest of the industry. The code matters, as you know, have been industry matters and not association matters solely. We have tried to keep the industry informed. Our mailing list is over three thousand manufacturers. We add to that all non-manufacturing members of the N. P. O. and V. A.; and our active correspondents on code matters has been from 425 manufacturers. I mention that to indicate to you that the association has tried to serve the industry at large.

This year, we have conducted an open house at our convention and invited the industry to attend, and made these conferences industry conferences. There will be three distinctive features. First, the very important question of presenting to the association members the formation of a new association. Second, the very important and interesting session for tomorrow on the code. We do not as yet have final word that the President has signed. We hope that we will have that tomorrow. At any rate, there will be full discussion about code problems tomorrow.

New Approach to Problems

And then, we are taking a new approach to all industry problems by recognizing that regardless of your particular type of business, your problems fall into one of two major classes, either affecting trade sales or industrial sales; and that new approach to our problems begins in the general industry conferences on Wednesday.

Just a word as to the future of association life. I think what we are going to develop is, first, a strong manufacturers association. The code which will be discussed tomorrow is for manufacturing members of the industry. It is very essential to them, then, that they have as nearly as possible 100 percent membership of all those who are covered by that code in the trade association. But this does not mean that anything will be lost or sacrificed in the other phases of our organized life.

I foresee a strengthening of the local organizations by whatever name they may have. I think the local clubs or associations will be revitalized; they will be better able to deal with their local problems in their own way, with complete authority over their own affairs, officers, elections, and so on, with as much help as possible from Washington.

And then, third, I hope that we will begin to have a thoroughly united industry. As our visiting delegates have said this morning, much has been done in the past to bring an understanding between the manufacturers and the distributors, and between the manufacturers and the master painters. But there is a great opportunity for us to get even closer together, and all live under the same roof, taking care of our own problems and safeguarding our own respective interests, but presenting united fronts in our common problems.

So that our future is one of an existing adventure into which your ship of state is now sailing, Mr. President. Thank you.

President Matlack: Is there any action to be taken on our general manager's report?

Mr. Shannon: The board of directors considered the report, accepted it and moved that it be referred to the convention for action.

General Manager McFadden: The American association still has to record a vote on a resolution similar to the one which you have approved. I merely wanted to interrupt at this point to ask those members of the American association who may have to leave the hotel, to please leave us their proxy, so that if arrangements are made to discuss that further and take a vote, that we will have your proxy. I have a proxy form here, and I will leave it at the door of this convention room, and then after that I will turn it over to Mr. Shannon.

So that if any of you have to leave, any American association members have to leave town, please let us have your proxy.

President Matlack: We will now hear from our Treasurer, Charles J. Roh.

Treasurer's Report

Mr. Roh: This year we added $663.76 to our surplus. That is the most interesting part of the treasurer's report, except to say that the falling off in membership dues was no more than we anticipated at the beginning of the year.

We collected from membership dues during the year, $19,891.50, and from interest and discounts on United States government bonds, $1,522.34, making a total income of $21,413.86. Last year, from the same sources, we collected $25,872.88. This year we spent and appropriated to the educational bureau (it was approved by the executive committe), $20,000. We wrote off doubtful accounts amounting to $750; and there is a small item on exchange and Federal checks of eight cents, which brings the total expenses of the National Paint, Oil and Varnish Association to $20,750.08, leaving an excess of $663.73, which has been added to our surplus account.

Our surplus account now amounts to $62,894.42, of which $49,000 is in fourth Liberty and United States treasury bonds.

For your information I would like to report to your organization that because of our part in the educational bureau you should also hear the figures of their activities. We spent during the year 1933, $109,245.33, and took in $134,271.38, leaving an excess of income over expenses of $25,000.

The total income for the preceding year was $177,729.02, which is $43,000 less this year than last year. Our expenses were $47,000 less than last year.

I have to report that all the departments of the educational bureau have operated within their budget, notwithstanding some unusual expenses we had because of the code.

These two accounts have been audited by Ernst and Ernst. I have the reports here before me; if anyone would like to ask a question or see the reports, they are welcome to see them.

President Matlack: Are there any questions you would like to ask our treasurer? If not, what is your pleasure? I think it is usual, is it not, for a motion that the report be accepted and spread on the minutes? Do I hear such a motion?

Mr. McFarland: I so move.

(The motion was seconded, put to a vote and carried.)

Nominating Committee

President Matlack: Mr. Treasurer, I want to thank you for your good work last year.

It is now my pleasure to announce the personnel of the nominating committee to bring forward the names of officers for the ensuing year:—L. M. DuCommun, Wells Martin, W. W. Schoales, M. C. Heins, E. S. Phillips, Willard E. Maston, chairman.

Arrangements have been made, with your permission, of course, that if the American association pass their resolution for amalgamation, that our nominating committee work with the nominating committee of the American association and bring forward the names of officers at our last meeting.

The next order of business is the report of our club program committee. Mr. Caspar, I understand, was taken sick and had to go back to Pittsburgh. He left a copy of his report with Mr. Shannon. I wonder if he left a copy with any other member of his committee? If not, Mr. Shannon will deliver that report.

I. O. U.

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Report on Club Programs

Mr. Shannon: The association year just closed is the third in which a series of five programs has been prepared and submitted to our local clubs for presentation to their members.

Your national club program committee started its first year of activity in the years 1930 and 1931, at which time it was felt desirable to give all members a closer view of our association, its activities, and most important of all, show its true worth and value to every member.

In the first series, program No. 1 dealt with the structure of the National Paint, Oil and Varnish Association. No. 2 covered the 1930 convention. No. 3 explained unfair competition, dealt with the non-exchange agreement and interpreted our code of ethics. No. 4 was devoted entirely to our two trade promotion campaigns, while the final program, No. 5, explained the relationship between the local club and the National Paint, Oil and Varnish Association.

In the following year, your committee presented five more programs, the subjects of which dealt specifically with the 1931 convention; traffic as related to our industry; the uniform financial plan; the simplification plan, and the final program composed a most comprehensive outline of the relationship and activities of the national association and the local club and the value of membership in a local paint club.

This Year's Work

This past year your committee again prepared and presented five programs. The first program was a brief review of the meetings of our two associations in convention at Washington in November, 1932. The second program, issued in March, 1933, dealt with the several trade promotion plans available to local clubs. This program not only emphasized the potentialities of the clean up and paint up and save the surface campaigns but, in addition, gave full particulars of the "Better Painted Cincinnati Plan," conceived and carried out by the master painters and decorators of Cincinnati, and a complete description of the paint dealers' night as planned and sponsored by the Paint, Oil and Varnish Club of New England.

Probably the most interesting program of the series was No. 3, the subject of which was "Unprofitable Merchandising." In this program many questionable practices, such as free deals, returned goods and price-cutting were forcibly dealt with in a brief but to-the-point manner. Its presentation in April to many of our local club members undoubtedly awakened in them a realization of the evils of such questionable trade practices.

In July, this year, the last two programs were issued to the local clubs for presentation to their members in the early Fall months. No. 4, entitled, "Credits and Collections," a very vital subject, was presented at an opportune time in view of the continual mounting of bad debt losses incurred by members of our association. In the preparation of this program, the cooperation of the credits and collections committee of this association was sought and secured. At their recommendation the program was divided into two sections. The first section was designed for presentation to clubs having a local credit group. The second section was for presentation to clubs having no local credit group. In both sections definite recommendations were made for carrying on credit work and stressed the value of local credit groups more closely contacting with the credits and collections committee of our national association.

The last program in this year's series, No. 5, was a very interesting story of our scientific section. Many of our local club members are unfamiliar with the history and prominent part played by this section in the development and progress of the paint and varnish industry.

An analysis of the work of the club program committee for the past three years indicates that many of the most important phases of our association have been presented in the fifteen programs issued to date. Believing that this committee might have served its purpose and completed its work, the chairman endeavored to ascertain if there was any need for its continuation. It seems to be the almost unanimous opinion that the committee should be continued, and that in the future it might possibly serve as a means of keeping our local club members more thoroughly informed on new developments that have and are so rapidly taking place.

It is the general opinion that there is a real need for preparing programs for local clubs. While it is obvious that a few of our larger clubs are able to develop their own programs, the majority of local clubs look with favor upon these prepared programs, use them and take advantage of the information and suggestions they contain.

Need for Continuation

Therefore, it is the recommendation of your club program committee that its work be carried on in whatever form and manner it can best serve the interests of all members.

Your committee gratefully acknowledges the help received from the many members of our association who aided in the preparation of this year's series of programs.

Mr. Shannon: I might say, gentlemen, that the recommendations of this committee were favorably considered by the board of directors; and in the proposed constitution and by-laws of the new association, which will be submitted tomorrow, provision is made for the continuance of this committee.

President Matlack: You have heard the report of the club program committee. What is your pleasure?

Mr. Everett: I move it be accepted and filed.

(Upon motion duly seconded, it was put to a vote and carried.)

President Matlack: Another of our committees which has done during the last few years a tremendous lot of uphill work, and only during the last year or so has commenced to make itself felt, or to be appreciated for the amount of work that it has done and the time it has given, is the credits and collections committee. We will ask Mr. Kenny to make the report at this time. Mr. Kenny.

Report on Credits and Collections

T. J. Kenny: The first part of this report has to do with the national paint credit plans. There are in existence today, paint or paint and allied credit groups in twenty-one of the major paint markets. Sixteen of the groups subscribe to national interchange, thereby making their payment information nationally available. The remaining five groups consist of New York, Cincinnati, Washington, D. C., New Orleans, and Atlanta. The paint and allied credit group of New York is now making every effort to work out a satisfactory plan with the New York Credit Men's Association to bring their group into national interchange. The Cincinnati Paint, Oil and Varnish Club reported through their secretary, John B. Hardig, that the national program No. 4 on credits and collections was presented to their membership on September 26, and

T. J. Kenny
Chairman on Credits

eight of their members have already indicated their desire to subscribe to national interchange. The paint club at Washington, D. C., operates an effective local market paint group, and we hope later will consider the advisability of subscribing to the national plan. There is in operation at New Orleans, a local hardware and paint group. A majority of their members subscribe to national interchange. The Atlanta Paint Club has not as yet favorably responded to the national paint credit plan, although there is in existence a local hardware and paint group exchanging local information.

The three remaining major paint markets that would make very desirable additions to the national chains are Kansas City, Minneapolis, and Baltimore. It is the committee's appeal that at the presentation of the national program No. 4 on the subject of credits and collections, at their respective paint clubs, the executives and credit men of Kansas City, Minneapolis and Baltimore investigate the benefits obtained by the national paint credit plan, in the markets where it is now in operation, before making any decision.

There are approximately twelve other paint markets, such as Richmond, Toledo, Dayton, Memphis, and Rochester, where effective paint credit groups operating under the national paint credit plan could accomplish much good. There are many of the paint firms located in the same markets today, now taking advantage of national interchange, thereby making their payment information interchangeable with all national paint credit groups.

Your committee wishes to again very strongly advocate the formation of paint credit groups, tied together by national interchange in all small paint markets as well as major paint markets, as the best means to fortify our industry against credit waste, and to combat the increasing bad debt loss trend that has prevailed during the past four years.

Surely the following figures should be sufficiently impressive to convince the small manufacturer as well as the large manufacturer, that it is only through the investment in adequate credit facilities and well organized and co-ordinated groups that a sound and businesslike credit structure can be developed within our industry.

Bad Debt Loss Survey

The bad debt loss survey for 1932 reflected the following results:

Manufacturers having an annual sales volume of less than $100,000 suffered a bad debt loss of 5.4 percent.

Manufacturers, having an annual sales volume of $100,000 to $500,000 suffered a bad debt loss of 2⅛ percent.

Manufacturers, having an annual sales volume of $500,000 to $1,000,000 suffered a bad loss of 2.8 percent.

Manufacturers, having an annual sales volume of $1,000,000 and over suffered a bad debt loss of 1.9 percent.

The consolidated bad debt loss of all classes of manufacturers was 2.6 percent.

The survey embraced 40 percent of the industry's sales volume. The combined bad debt loss amounted to $2,062,665. If the same rate of loss prevailed for the entire sales volume of the industry, it means that out of a sales volume for 1932 of $203,323,315, it was necessary to write off an amount in excess of $5,000,000.

The survey also clearly indicated that the investment in receivables had increased substantially in proportion to sales volume. For the years 1926 to 1930, all receivables outstanding were maintained between 15.5 percent to 16.8 percent of sales volume. In 1931 the percentage had increased to 17.9 percent and in 1932 it increased to 20.1 percent.

With an increase in bad debt losses of 0.6 percent in 1926 to 2.6 percent in 1932, and an increase in the investment of receivables to sales of 16.2 percent in 1926 to 20.1 percent in 1932, it would seem that the industry can no longer take a passive view of its credit and collection structure and policies.

The credit features embraced by the code will unquestionably tend toward creating improved conditions, but there is much to be done by the firms in the industry before we can safely feel that we are operating on sound and business-like credit and collection practices.

In forbidding additional consignment of our products, the code will eliminate a practice, that if it had been continued, would not only greatly increase bad debt losses and enlarged inventory investments, but tend to destroy payment terms. The Paint Industry Recovery Board will have accomplished a splendid step in the right direction when it can develop plans that will ultimately eliminate consignments from the industry.

The code will establish another constructive step in the industry in permitting only one dating order each year to an account to be shipped at the manufacturers' convention after October 15 with April 1 dating and regular terms.

With respect to the code's provision for standard terms of 2 percent discount in ten days, sixty days net, for dealer or agency accounts, and 1 percent discount in ten days, thirty days net for industrial accounts, it is felt that the provision would result in greater benefit to the industry if it had linked with it a credit control plan that would prevent unlimited delinquency. Much of the good derived from a standardization of payment terms may be lost if firms in the industry can take advantage of the privilege of allowing unusually long periods of delinquency to exist in the payment of their customers' accounts.

Committee Recommendations

Your committee on credits and collections desired to submit the following recommendations for your consideration:—

(1) So that the national paint credit plan can be made a more effective weapon against credit waste, it is suggested that firms, large and small, not yet members of a paint credit group, investigate the benefit that can be derived from a membership in their respective credit groups.

(3) That every paint club or district of the National Paint, Oil and Varnish Association, appoint a credits and collection committee to keep in touch with their respective markets, to assure the proper adherence to the credit features of the code.

(3) That the credits and collection committee of the National Paint, Oil and Varnish Association be authorized to investigate credit control plans now in existence in other industries, so that a comprehensive credit control plan can be developed for the paint industry.

Chairman's Comment

Mr. Kenny: Now, gentlemen, I would like to make a few brief comments on various features of this report. I think it is quite evident from the report that the bad debt losses are reaching a point now where they are considerably out of line with sales volume. If there were means possible whereby a consolidated profit and loss report could be prepared by the manufacturers' operations for the year 1932, I am sure that every one of us would be startled by the ratio of bad debt losses to net profit, and, gentlemen, in the last analysis isn't it wisdom that a credit policy is determined more by the ratio of bad debt losses to net profit than it is by the ratio of bad debt losses to sales?

However, let's look at our problem from the angle of the ratio of bad debt losses to sales, and let's find out what happened during the past six years. In starting I would like to make this statement, gentlemen, that three years ago the members of the association were solicited as to their viewpoint as to the percent of bad debt losses they felt should prevail in our industry and the majority of the replies received indicated that ½ of 1 percent should be reasonable. There has been no one year during the past six years that we have been able to confine our bad debt losses to 0.5 percent. For the years from 1926 to 1930 the bad debt losses ran from 0.6 percent to 0.8 percent. For the year 1931 the bad debt losses were 1.1 percent, and for the year 1932 the losses were 2.6 percent.

Now, bear in mind, gentlemen, that when we refer to the losses of last year of approximately $5,000,000 that does not contain any losses sustained by jobbers or dealers in our industry, and I am sure that if we were able to define the losses of the jobbers and dealers during 1932 it would add an honest, substantial burden in bad debt losses that our industry has to carry.

I believe that every one here today is extremely anxious to see that the losses of the industry are reduced. I believe they are anxious to see their own losses of their own companies reduced, but I do not believe—and I feel you will concur—that our bad debt problem will be solved entirely by the improvement of general business conditions.

You have on your credit and collection committee today some of the most competent credit men in the industry, and the firms they represent contribute a very substantial portion of the industry's sales. During the past several years they have given very careful thought to their credit and collection problems, and they feel that before we can consider our industry or the credit structure of our industry in a healthy position certain abuses will need to be remedied and certain practices will have to be adopted.

Suggested Practices

The remedies and practices that they have in mind are as follows:—

First, they feel there is a need for the standardization of payment terms.

Second, they feel that the excessive use of dating terms must be curtailed.

Third, they feel that when a new account is opened up by a manufacturer in the industry, a careful investigation should be made of that prospective customer's financial responsibility, and that examination should be made by a business market individual.

Fourth, that in the event the agency reports do not contain a recent balance sheet, the prospective customer should be asked to furnish a copy of his most recent financial statement, so that some impression can be gained as to his financial position.

Fifth, every means possible should be furnished to supply adequate payment information.

Sixth, some means should be developed whereby unlimited delinquency can be restricted.

Now, very fortunately for us, the code provides for standardization of payment terms. The code also provides for one dating to each customer per year. With respect to the solicitation of financial statements, that will necessarily depend upon the initiative of the various manufacturers.

In connection with supplying adequate payment information, for the past three years your committee has strongly advocated the formation of local credit groups, supplemented by national interchange, for three purposes: First, to supply the payment information of the local paint market; second, to supply the payment information of the outside paint markets; and third, to supply the payment information from the firms and industries selling to our customers.

With respect to a means whereby unlimited delinquency can be curtailed, the only method that has so far been found, and that is in use in various other industries, is what is known as a code credit control plan. A credit control plan has two purposes in view. The first purpose is to influence the suppliers of a market to cooperate so that if a buyer permits his delinquency to exceed a certain designated period, further credit will be curtailed. Second, the objective of a credit control plan is that at the time it is placed in effect a gradual reduction program will be developed with each delinquent account. The thought back of that is this, gentlemen, that if a business is operating profitably it is only fair that the profits should be utilized for gradual reduction of delinquent obligations, and, on the other hand, if a business cannot carry out a gradual and a reasonable payment program, it would seem to be evident that either that business is not operating profitably or, if it is operating profitably, the profits are being diverted to other channels to the detriment of its creditors.

Paint control plans are not entirely new to the paint industry. At the present time the jobbers and dealers in the Chicago market operate under an effective credit control plan. Today the manufacturers in the Chicago market are endeavoring to create a control plan for their customers in Cook county. I have a letter that I received from Mr. Waterhouse, who is the Pacific coast representative of our committee, and I would like to read a portion of his letter to you because it deals with the credit control plan:—

A Pacific Coast Plan

"May we say that we have as an early prospect the inauguration of a system of credit control in the San Francisco Bay area, such a plan to be first applicable to painting contractor accounts. This, of course, will eventually be extended to dealer accounts also, and we are sure that in the very near future the other coast cities, Portland, Seattle and Los Angeles, will follow our lead and install some similar plan.

"Our paint people here have been working on this project since the end of May and, anticipating an early materialization, the writer did not submit the plan as forwarded by you in folder form to our groups on the Coast, for most of them are operating in a similar manner to that outlined in your program, namely, the supplementing of bureau exchange information by group meetings and discussions."

In closing, I would like to say this, I believe there is room for the use of a conservative, constructive, and not too drastic credit control plan in our industry. I believe that over the course of the next two years we will find that many of our paint markets will adopt credit control plans of their own; that, coupled with the fact that our losses today are excessive, leads me to believe that it would be sensible for our industry to investigate the credit control plans that are now in existence in other industries, so that a plan can be fashioned that will ideally fit our own particular requirements. Thank you very much.

Discussion on Credits

President Matlack: Mr. Kenny, do I understand from these motions that it would make it obligatory for each club to follow these resolutions if they are so passed?

Mr. Kenny: No. With respect to having a local credit committee that may be, or that would probably be the decision of the national association.

President Matlack: The way it reads, I figured that it would become compulsory, whether the club wanted to or not, to appoint a committee of that kind.

Mr. Kenny: It would be just as it is today, I assume.

President Matlack: Unfortunately, we have quite a few clubs that haven't enough members to form a committee.

Mr. Kenny: There are certain clubs in existence today in which the membership would not be large enough to develop a credit group, and as a result of that we have not been able to accomplish very much in the formation of groups in those particular clubs. I have in mind Birmingham and a few others,

but in the major paint markets it would seem possible to have credits and collections committees, and every one of them should give consideration to whatever we may be able to develop in the way of a control plan.

President Matlack: I should say so, but I would say that there are some clubs where this could not be done, and does this make it obligatory?

Mr. Kenny: Not necessarily.

President Matlack: You have heard the wonderful report of our credits and collections committee, a committee that I think is doing more good, in some instances being misunderstood, but when straightened out accomplishing what they are working for. Mr. Kenny and his committee have laid before us three resolutions. What is your attitude on these resolutions?

Adam E. Daum: I move that the report be received and filed and the resolutions referred to the new incoming credits and collection committee as it may be constituted.

(The motion was seconded by several members.)

President Matlack: It is moved and seconded that the able report of Mr. Kenny be received and placed on file, and that the three resolutions which that committee have laid before us be referred to the incoming credits and collections committee. Is that your motion, Mr Daum?

Mr. Daum: Yes, sir, as it may be constituted.

President Matlack: Are there any questions or suggestions? Are you ready for the question? All in favor please signify the same by saying "aye;" contrary, "no." So ordered.

Mr. Shannon: Mr. McFadden, has just handed me a telegram which he has received from Mr. Heimann, the executive manager of the National Association of Credit Men:

Please extend convention our heartiest greetings. Pleasure to have cooperated the past several years through Chairman Kenny and his fine committee. Be assured of our continued readiness and preparedness to serve paint industry, particularly in any credit phases of its recovery plans.

Clean Up and Paint Up

President Matlack: Our next order of business is the clean up and paint up campaign. As usual, Dr. Plumb and his committee have done a very quiet but worth while piece of work. We would like now to hear from Dr. Plumb.

Dr. Plumb's Address

Dr. Plumb: In consideration of your patience and of the hour, I would like to make just a little bargain with you. I will be agreeable to leaving out several pages of my supplementary report if you will do two things for me:—If you will take time to look through, at least briefly, the report of our clean up and paint up committee in the bound report supplied for the convention. The report is so stunningly illustrated that I am sure you will read it with a great deal of profit. The second thing, while you are moving in and out of these convention meetings, won't you stop long enough to look at our clean up and paint up committee exhibit. I am not asking you to tarry there for any length of time. I am inclined to believe, however, that if you examine some of the exhibits from our various campaigns, you will become so interested that you probably will tarry quite a time.

Now, what I wanted to talk to you about today, which is, understand, entirely supplementary to any comments on the report, is the general theme of "Flank or Frontal Attack."

"Flank or Frontal Attack"

Our activity has reached its majority. As most of you know, clean up and paint up was originated by the late Allen W. Clark in St. Louis twenty-one years ago. It stands today in all the vigor of youth at the very threshold of its greatest power and usefulness.

Our industry is fortunate in having two essential promotional activities. Paralleling the clean up and paint up movement we also have our other campaign—save the surface.

These two great campaigns are not to be confused by any impression that save the surface and clean up and paint up are competitive to each other, or work at cross purposes. They do not. Nor does either campaign overlap or duplicate the activities of the other. They are both strikingly complementary—one as necessary to the industry as the other.

Indeed, I like to think of these campaigns as the two great legs on which our giant industry moves ahead from year to year. The one great leg steps forward as the whole country annually responds and reacts to the Clean Up and Paint Up Campaign. Then the other leg advances as the Save the Surface Campaign makes the appeal for conservation.

With either leg alone our giant could only hop unsteadily. On both legs it can march ahead—and in fortunate years it can even run.

Progress through the effectiveness of these two activities depends fundamentally on keeping each leg free from any entanglement with the other. I can conceive of no greater misfortune than to throttle and impede the progress of either by undertaking to bind them together.

Essentially the save the surface campaign is the direct concerted effort of the paint, oil and varnish industry to promote the use and sale of its products—and of its products only. It operates directly and frankly and exclusively in the interest of these products.

The methods of save the surface are mainly rational in nature, depending largely upon logical explanation and reasoning. Its text is that the use of paint and varnish, etc., averts the otherwise inevitable deterioration and degeneration of materials. Its appeal is therefore to the individual who otherwise would suffer loss, and its primary base is economy. The scope of save the surface includes a direct audience who immediately benefit through the economy of protective coatings.

The exploitation methods of the save the surface campaign consist mainly in the use of the printed word, in paid advertising space and through the use of unpaid space in so-called publicity or reading notices, or news or feature articles. It is essentially a campaign of education in reasoned economy. It is avowedly an organ of the manufacturers of paints and varnishes and is generally known and recognized as such.

Aims of the Campaign

In definite contrast is the clean up and paint up campaign. In the first place it has a broader aim, for it promotes the use of other materials besides paint and varnish, including such products as soap, brooms, rakes, seeds and other materials suggested by "Clean Up."

In the second place it promotes a distinct social service by inducing groups of

R. A. Plumb
Chairman on Clean Up and Paint Up

people to organize themselves and to enter into the spirit of the paint promotional activity itself. Do I make myself clear?

Let me illustrate. Suppose we wanted to sell airplanes. Our first problem, assuming we had the airplanes to sell, would be to make the public "airplane conscious." How would we do that? Well, the most obvious way would be to advertise our product. Advertise in the national magazines, on billboards, by radio, in the newspapers, get lists of eligible prospects, send them letters, folders, and different publications would probably help us by giving us some news articles. This would be very good and would certainly get us inquiries and prospects and enlist a lot of interest in our airplanes.

This is, if I may say so, the equivalent of the save the surface campaign in the paint industry. A direct frontal attack for business. We want to sell our products and we tell people about what we have to sell, its advantages, delights, pleasures, etc.

But that would not be enough. It would take years and years, perhaps, to make the public take the airplane seriously. The first thing necessary is to set the airplane fashion—make airplane riding the thing that everybody wants to do. This is founded on a peculiar crowd psychology which is at the base of any kind of a successful movement, whether it is political or sales. People do things, whether it is painting and varnishing or chewing gum because everybody is doing it—because the fashion has been set. So in order to make the airplane sell, we would have to make the airplane popular.

Very well—we will try a new form of airplane promotion. Let's set up a number of prizes for coast-to-coast airplane travel—for non-stop trips for single-passenger ships, refueling stops for passenger-carrying planes, etc. We would vary these contests to make it interesting to the people and to encourage new entrants. If a great flyer, such as Lindbergh, is available, we will bring him into our activity as an official at these races—perhaps have him an honorary high official in our flying organization.

We would organize "reliability tours" in which everybody was invited and different types of planes were handicapped, and various prizes were offered for the greatest efficiency, the fastest time, for the longest day's travel, and for different things like that. We would get the public interested, we would get the public to *participate with us* in what was nearest and dearest to our hearts—the sale of airplanes.

You know when you are fighting a lone battle it is an awful long pull, but if you can get other people pulling with you, helping you, it makes it much easier. This kind of a sales promotional activity (and that's all it is)—is what I would term strategy by flank attack.

What Clean Up Is

A good example of sales promotion by flank attack is our own clean up and paint up activity.

Which method is more effective—a frontal attack, such as save the surface, or a flank attack, such as clean up and paint up? That point is not in question. Both methods are essential. I am merely stating the position and purpose of clean up and paint up. I am only stating that when you are able to obtain the active help of such characteristic groups, as chambers of commerce, Rotary, Exchange, Kiwanis, and other service clubs, churches, schools, the American Legion, boy scouts, girl scouts, campfire girls, women's clubs and junior chambers of commerce, and many types of officials, such as mayors and common councils, health and fire commissioners, and numerous city, state and federal agencies, that you have obtained a wonderful sales help for your industry.

Can you get the help of such disinterested parties, powerful factors in the molding of public opinion, and have them agree to make themselves tools or instruments of the paint and varnish industry? Not if they know it. But present your proposition through a social idea such as clean up and paint up, skillfully planned and engineered, of course, and immediately you have all these groups of people working for you.

Don't think this is an idle dream. It is the type of promotional effort done by smart industries all the time without you or I realizing it.

Do you recall the great Edison celebration at Dearborn several years ago? Did it ever occur to you that this celebration increased the current load of the electric light companies tremendously? Buildings throughout the country from coast to coast were illuminated. The current consumed due to the celebration constituted a staggering total.

Now then, would you be shocked if I told you that this whole thing was a very clever and adroit propaganda campaign engineered by one of the ablest publicity experts in the United States? The Edison Illuminating Company had to manufacture this propaganda vehicle and even today not one out of a hundred thousand people recognizes that through this celebration the electric light companies did a wonderful stroke of business.

Take the matter of the Lincoln Highway. Everybody today realizes the advantages of good roads. On the surface it seemed a very fine altruistic idea to stimulate convenience of transportation. Yet was it not a clever propaganda campaign on the part of cement companies and others interested in good roads to market some of their products?

Selling by Flank Attack

Far more powerful than any slogan to use concrete for road building was this flank attack whereby a great highway was started and many others followed in the course of time. Naturally cement was used—lots of it!

Is our clean up and paint up campaign any less a vehicle to sell untold gallons of paint and varnish than was this highway idea to sell cement?

The United States Playing Card Company wanted to sell more playing cards. Did they depend entirely on a direct frontal advertising attack through magazines and newspapers, etc. urging people to play cards more frequently? No, they were too clever—they inaugurated a great bridge contest with Eli Culbertson as the master showman and so stimulated interest in bridge that more and more people took up the game, and bought playing cards by the million!

A few years ago manufacturers of dress goods found their volume seriously curtailed because women's dresses were so short. We all remember that. Would it not have been funny if the industry concerned had tried to show the advantages of long dresses in the accepted orthodox fashion—through advertising? Instead they induced society women and actresses, through substantial payments of course, to wear long gowns for evening wear. Long gowns were a decided novelty and the pictures got into the papers. People began to talk about them, and so, cleverly and adroitly, they set the vogue through the right channels for longer gowns, and with this change their volume of yardage sales naturally increased.

How many people do you think dreamed when they saw a well known society woman clothed in a long evening gown that this was definite propaganda on the part of the yard goods manufacturers?

No flank attack was ever more cleverly conceived and executed than this one, because they had to fight right into the teeth of a contrary mode and fashion.

They say the public is fickle, and it is certainly true that the tastes and desires of the masses will veer from one direction to another, like the swirling winds. But I say that the very emotions that account for the fickleness of the public can be taken advantage of by the industry with clever leaders to control those emotions and to direct them into channels where that industry can not be forgotten.

And that, my friends, can not be done by frontal attack alone. The way must be prepared and the scene set by the right kind of propaganda through flank attack.

Enlists Public Support

Clean up and paint up is the paint and varnish industry's "flank attack." It does not say—"Mr. Public, you should paint your house because it makes it beautiful and because it preserves the surface and saves you money in the long run." Instead, it enlists Mr. Public, with thousands of his neighbors, in a movement of which he is one and through which everybody agrees to pay more attention to the painting up of his home, factory or office building. It operates by mass methods. A good deal of its influence is derived from mass psychology through the contagion of imitation—through seeing other persons cleaning up and painting up, and from each and every person feeling it is their own idea and that they are doing this themselves because they want to do it.

Isn't it far more desirable to have several hundred thousand people in a city like Chicago taking active part in advocating paint and varnish, than only the few thousands who are engaged in that business doing this big job all by themselves?

Isn't it far more advantageous to have the mayor issue a proclamation of clean up and paint up, and the fire chief or superintendent of schools award prizes to individuals and to teams of workers for successful accomplishment, than to have to fight your own sales battles all alone against the tremendous buying resistance of the public today?

How many industries would give their right arm, figuratively speaking, if they only had at their disposal such a vehicle of promotion as this. It must be remembered that every industry does not readily lend itself to the development of a piece of propaganda analogous to clean up. Actually, gentlemen, this movement is like a rare gift from Providence. And we are probably more fortunate than we deserve to be to have it as our very own. Many industries in their effort to create a propaganda movement have been forced to expend hundreds of thousands of dollars. The paint industry, on the other hand, has actually had clean up handed it on a golden platter—with the gold thrown in in the bargain. It is one of those great streaks of luck or good fortune that occasionally happens.

Here we have a frontal attack and a flank attack—what a perfect combination to support any sales strategy! The flank attack is subtle, unlooked for, disarming. The frontal attack storms the citadels, pours over the ramparts, consolidates the gains. A frontal attack alone can easily be resisted by the enemy. It stands in the open, anybody can see its strength, we can all see it coming, we are ready and prepared.

But in the meantime, a flank attack has stolen in—disarming the defending forces so that when a frontal attack is made most of the resistance has been overcome. You know sales resistance is a very definite thing. It is not merely a mental hazard or a hypothetical hurdle. Going back to our airplane illustration; a man approaches me and wants to sell me an airplane. I don't want one. Would not take it as a gift. He can talk himself blue in the face—an airplane is one thing I can do without right now. No, sir, I don't even want to have a demonstration ride in one. But let a group of local business men, including myself, be invited out to the county airport to witness the start of the great "Reliability Tour" and by the time the day is ended I have an entirely different idea of the airplane, its comfort, safety, speed, desirability, economy for certain purposes, etc.

The same thing is true of a hundred other business men who attended the meet with me. Why?—because we were made, without our knowledge, *to play a part*, and we acted our parts nobly. That's the subtle sales strategy of the flank attack. Clean up and paint up is just such a flank attack.

Civic Proclamations

Can you hire the mayor of the city of Chicago, for instance, to issue a proclamation to all good citizens to buy new cars? Well, mayors of many cities have issued proclamations to their people to get out

their paint cans and paint brushes through clean up and paint up. Such a movement stimulates the inherent civic pride in all of us. It appeals to a sense of fitness, to a love of home, to loyalty to our community. Dissociated from any ulterior motive clean up and paint up gets "under peoples' skin." It causes them to perform acts which ordinarily they neglect.

Clean up and paint up promotes spending, investment, expansion, beautification. Through mass action and through a frank appeal to the emotions, it becomes the most powerful weapon we have in our sales arsenal for enabling our industry to hold its position among all other industries in that thrilling contest for a bigger portion of the spendable dollar.

In case you may think that I am overemphasizing this feature of clean up, let me remind you of the fact that this audience does not typify the average individual who buys our products—at least as far as our business methods are concerned. We buy through skilled purchasing agents who base their decisions on known facts and comparisons. Sentiment plays no part. The "indirect appeal" or the "flank attack" mean nothing to men who have a certain item to purchase, as per certain specifications and at a fairly predetermined price.

But that isn't the way the general public buys things. Neither do you or I personally buy things that way. We, as individuals, are very largely influenced by sentiment, by indirect appeal. Haven't you often purchased an item which you wanted very much and thought would be very useful to you? Oh, you wanted it so badly! And yet, after you got it, it was hardly ever used and later you often wondered what ever made you buy it. Why did you do it? You were emotionally influenced—that's why!

The best examples of this power of indirect appeal—an appeal to the feelings rather than the coldly calculating reaction of the intellect—can be seen in a study of the government figures on cigarettes, cigars and tobacco. These show total sales for a single year in the United States aggregating over $1,200,000,000.

One Billion Two Hundred Million Dollars!—Is there any logic in that sum? An amount as large as the annual salaries of all the public school teachers in the United States!

We know that education is more important than tobacco, not a man on the street would argue against you on that point. But our national practice is far below the power of our intelligence. Ought this nation to spend nearly as much on coffee alone as for all the paint and varnish it buys? Ought we to spend over three hundred million a year on patent medicines when so many excellent physicians lack adequate income? Which does the average stenographer buy from her meager salary? A permanent wave to improve her appearance or a text book to improve her English?

Appeal to Emotions

Are the average radio programs made up of scientific lectures; educational discourses; intellectual discussions? Or are they largely devoted to entertainment, to music, to humor—in short to appeals to our feelings and emotions?

Here are the figures for the circulation of books from the public library of a typical American city:—Romance, adventure and crime, 76,000 volumes; biographies, travel books, history, religion and science, 5,500 volumes.

Or think of the type of movies that are responsible for the enormous theatre attendance! I have heard some of my friends here boast they have not seen a moving picture in two years. Very well, they are wrong! Seventy-five million persons per week pay admission to movie houses and come back for more!

I could multiply examples like these by the dozen, but you see what I mean. The general public buys what it likes and wants rather than what it needs or logically ought to have.

And we can never greatly increase the use of our products until we change the paint psychology of the American public from the merely utilitarian to the emotional point of view. People in the mass do not think—they react.

You see the point Clean up and paint up is doing exactly that kind of a sales job for you. Making people react favorably to paint and varnish by causing them to participate in a paint and varnish movement. Raising their aesthetic standards and causing them to become dissatisfied with their present surroundings. They want better looking homes—inside and out; better looking furniture; neater yards, and more attractive gardens.

And while it also brings forth the rake, the broom, the shovel, and the bar of soap, these are but symbols of the beginning of a movement which will result in a tremendous increase in the use of paint and varnish. Actual figures have proved that to be the case in specific instances.

I have become convinced the great power and tremendous force of our clean up and paint up campaign as a sales promotional activity is not thoroughly understood throughout our industry. This condition is explained by the single fact that a true appreciation of clean up and paint up requires much study and investigation.

I am completing four years on the clean up and paint up committee and I confess to you, gentlemen, that each year of close associatinn with this activity has brought to me an increasing appreciation of its value. I have often said if every man in our industry were fortunate enough to have the opportunity of being active on our clean up and paint committee this campaign would become the greatest sales promotional force—not alone in our industry, but as a model for every other industry in the world.

Deplores Indifference

We fail badly at times by not more carefully guarding the civic and altruistic background of clean up and paint up. We are altogether too indifferent and too careless of that very delicate relationship between the social phase of clean up and the commercial dollars and cents view. It is a great mistake to thoughtlessly place paint up before clean up. We are too much inclined to value it by the extent to which superficially "paint up" is written all over the campaign.

When we do that we are doing nothing more or less than actually crucifying the power of a great social and altruistic movement by obviously endeavoring to nail it to a cross of gold. We think in terms of orders—when we should think in terms of building paint-consciousness in the mind of the public.

We are simply devitalizing the power and vigor of this great movement by a too close and obvious association with the paint and varnish industry.

For the protection of our own best interests, and our greater profit, clean up and paint up should not be operated as an obvious part of our associational activities of the paint industry. To do that is simply to blight and utterly kill the effectiveness of the most resultful sales instrument our industry has.

It is for this reason that increased care should be taken to maintain the entity of clean up and paint up separately and distinct from the obvious commercial activities of our association.

The establishment of an institution which has created a highly altruistic concept of itself in the mind of the public, in a commercial setting which emphasizes the proprietorship of a special interest, even though that special interest is endeavoring to sincerely maintain the altruistic character of its special agency, can not help but be awkward to a detrimental degree. For example, the first time I visited Washington after the removal of the National Clean Up and Paint Up Campaign Bureau from New York to the paint and varnish headquarters in the nation's capitol, I took opportunity to look up the number of our clean up and paint up bureau in the telephone book and in calling received the reply, "Paint and Varnish."

"Of course, we cannot expect the whole conduct and aspect of our association headquarters as a whole to be made to conform to a very special aspect of one of its bureaus, but you can imagine the reaction of a secretary of a chamber of commerce, a superintendent of schools, the president of a women's club federation, who have been sincere, earnest and enthusiastic in promoting clean up and paint up campaigns to have the commercial side of our campaign bluntly thrust at them. For many such people, who have back of them the potential co-operation of many thousands of people who have no connection whatever with the paint and varnish industry, sudden emphasis upon the proprietorship of a distinctly commercial industry is a disconcerting shock, and our welcome, which to us, seems benign and cordial reacts to them like a slap in the eye. We immediately find ourselves thrown back from the high-spirited advance to a defensive position, which forces us to explanation and argument. In these days of emergency, it is true that there are some civic leaders who will deliberately overlook the commercial purposes of a special interest as a temporary expedient, but the rank and file of our highly intelligent cooperators is resentful of being open to criticism that they are being made the catspaw of a special interest. It is a delicate matter to invite some of these leaders to our office at the national headquarters, lest they become cooled in their enthusiasm for clean up and paint and diminished or lose the cooperation of perhaps thousands of people whom they represent in some nation-wide organization.

Protecting Altruism

Please bear in mind that I say this in a spirit of simple explanation Protection of the altruistic concept of the bureau is one of the problems this industry has to face squarely and fairly. On the one hand, we have a wonderful propaganda tool in our hands which has been the means, even with relatively little support on our part, of winning over millions of people to the use of paint and varnish products. On the other hand, it has been a movement which we ourselves have never fully appreciated—have really never given free rein—have never encouraged the way it should have been encouraged—because we have been too close to our own immediate job of making and selling paint to vision fully the mighty, though hidden, avenues through which the public can be influenced to buy our product.

These may be harsh words, but I wish merely to make it perfectly clear that I am not criticizing anybody. I myself am as much to blame as anybody here. The only thing is we have not understood what clean up should really mean to us.

We have all got our own peculiar troubles—we just have not thought of the industry as a whole. We have not realized that our business—your business—and your business—and my business, improves with the improvement of the industry in general. That your business—and your business—and my business—recedes as the business of the industry in general recedes. If people develop the fashion of using less paint—there will simply be less of that business to go around—for you and for me.

It is time for us to become more industry-minded—more social-minded, just as the millions of people who have joined in on the clean up movement are social-minded. They are not thinking individually of their own homes alone—they are thinking of their community — knowing that as their communities improved and progressed, so would they individually benefit and improve.

I am no prophet and do not aspire to the mantle of one. All I can say is that in the period ahead of us, which it appears will develop into one of the most sharply sales competitive periods in all our lives, it is my fervent prayer that paint and varnish industry will not leave one stone unturned, or neglect one single instrument of sales promotion it can lay its hands on to improve its position in the public's mind. And first and foremost among those instruments of promotion is sales effort by flank attack through clean up and paint up.

The prepared report of the clean up and paint up committee was distributed in printed form to the members. Its text follows:—

Report on Clean Up and Paint Up

In 1933, our clean up and paint up campaign has signally demonstrated its virility and its general public welcome as a speedy and practical instrument for successfully challenging chaotic economic conditions and definitely selling goods of the industry in the face of unprecedented business adversity.

In the Spring, when the banking system of the nation was paralyzed, when purchasing power was at its lowest ebb, the clean up and paint up campaign was grasped as a business tonic and pushed throughout the country with accentuated vigor.

Our National Clean Up and Paint Up Campaign Bureau does not maintain a clipping service which previous experience has demonstrated, might cost several thousands of dollars a year, because of the enormous volume of newspaper publicity, but the voluntary returns indicate that public interest in the campaign now appears even keener than it was when the last intensive survey was made several years ago, when more than 7,000 local campaigns in a single year were definitely located.

Clean Up and Paint Up Sells Paint

Despite the difficult conditions, some of the larger campaigns have reported an actual increase in paint sales in their cities as compared with previous records, and have furnished figures sponsored by highly representative local committees to prove their results.

Chambers of commerce, mayors, health commissioners, fire commissioners, Rotary, Kiwanis and Optimist clubs, the American Legion, women's clubs, Boy Scouts, Girl Scouts, Campfire Girls, boards of education, churches, civic and business organizations, and state and Federal agencies all have enlisted and done their part to use the Clean Up and Paint Up Campaign as a mighty instrument for the revival of prosperity and the maintenance of the best American standards of living.

Invited to Furnish Plans to NRA

A significant tribute to the prestige of the clean up and paint up campaign was an invitation to your national chairman and your executive secretary to meet in personal conference with NRA officials in Washington and to present plans and suggestions for use in a Fall drive for property rehabilitation. Following the conference, a plan of community co-operation of nationwide scope was furnished to the NRA, which acknowledged the service in a gracious letter of appreciation of its practical usefulness for stimulating business.

Too Close to a Mountain

The ramifications of the clean up and paint up campaign are so vast that any attempt to adequately reflect it within the compass of a few pages is a good deal like photographing a mountain at close range, with only a small section filling the radius of the lens and the great whole left entirely outside of the picture. For example, the report of a single large city campaign occupies a large packing box with dozens of large scrap books of publicity and literally hundreds of hand painted clean up and paint up posters done by volunteer artists without remuneration other than the joy of helping to make their home community a better place to live in. On account of this handicap, all that is attempted in this report is to present a few representative illustrations from the reports of model 1933 campaigns.

Increase in Painting in St. Louis

An impressive demonstration of the power of the clean up and paint up campagin was made in 1933 in St. Louis, the city in which the campaign was originated by the late Allen W. Clark, twenty-one years ago.

It was estimated by the St. Louis clean up and paint up campaign committee, of which P. C. Frayser was chairman, that the 1933 clean up and paint up campaign in St. Louis increased painting in the city by 80 percent as compared with the corresponding record of 1932.

In St. Louis alone, 235,355 gallons of paint and varnish products, with an estimated retail value of $730,984, were sold in the clean up and paint up campaign.

The jobs in the following table were listed by the St. Louis Chamber of Commerce. The computations are subject to individual opinions of values, according to individual experience, but follow previous tabulations for purposes of uniform comparisons:—

	No. of jobs.	Total gallons.	Total price.
Houses painted.	7,391	88,692	$288,299.00
Walls painted..	27,222	13,611	30,624.75
Floors painted or varnished ...	21,898	10,949	43,796.00
Woodwork painted or varnished	21,576	10,788	32,364.00
Porches or stairs.	14,003	7,001½	22,754.87
Fences	10,711	32,133	96,399.00
Outbuildings ..	4,331	34,648	112,606.00
Roofs	11,681	35,583	97,853.25
Screens	56,887	1,950	6,337.50
Totals	175,700	235,355½	$730,984.37

Sales of Paint

Paint jobs totaling 10,822 have been reported to the clean up and paint up campaign bureau in Washington by Cline B. Finnell, secretary-manager of the Sedalia Chamber of Commerce as a result of the 1933 clean up and paint up campaign in Sedalia, Missouri.

On the basis of the uniform computation of retail values which have been used for a number of years, and which is subject to individual opinion or experience, the retail value of the paint and varnish used, approximated $58,164.50.

The figures are as follows:—

	No. of jobs.	Total gallons.	Total price.
Houses painted.	444	5,328	$17,306.00
Walls painted..	1,184	597	1,343.25
Floors painted or varnished ...	1,803	901½	3,606.00
Woodwork painted or varnished	1,405	702½	2,107.50
Porches or stairs.	826	413	929.25
Fences	781	2,343	7,029.00
Outbuildings ..	813	6,504	21,138.00
Roofs	531	1,593	4,370.75
Screens	3,035	103	334.75
Totals	10,822	18,485	$58,164.50

In addition to the foregoing, which was a report on residences, 264 clean up and paint up jobs on stores, offices, etc., in the downtown district were reported. The fronts of stores were repainted and revarnished to attract customers, the lettering of signs was renewed, and delivery trucks were repainted. The interiors of stores were repainted and revarnished, and shelves, showcases and furniture were refinished.

Evaluation of the results of the 1933 clean up and paint up campaign in Hamtramck on the uniform basis of estimate used for purposes of comparison by the National Clean Up and Paint Up Campaign Bureau in Washington, indicates that this year's house to house canvass in that industrial community of 52,000 population, sold 11,179 gallons of paint and varnish, with an estimated retail value of $36,983.50. While the estimates of retail values may be subject to modification, according to individual opinion or experience, the following record of the number and kind of paint jobs done is an accurate and carefully checked compilation:

	No. of jobs.	Total gals	Total price.
Houses painted.....	508	6,096	$19,912.00
Walls painted.....	839	419½	943.875
Floors painted or varnished	572	286	1,144.00
Woodwork painted or varnished	636	318	954.00
Porches or stairs.....	321	160½	481.625
Fences	433	1,297	3,897.00
Outbuildings	261	2,088	2,786.00
Roofs	166	498	969.50
Screens	409	14	45.50
Totals	4,145	11,179	$36,983.500

In addition to the foregoing, 468 walls were papered or kalsomined.

Jobs Provided

An example of what the clean up and paint up campaign can accomplish in creating employment is contained in the 1933 clean up and paint up report of the Lubbock Chamber of Commerce to the National Clean Up and Paint Up Campaign Bureau in Washington.

This year's campaign in Lubbock provided 11,440 days of labor at a total cost of $17,160.54. As a result, 1,911 families were aided by the campaign, each family getting an average of one full week of work.

The New York Times, in its report of the award of the trophy by our National Clean Up and Paint Up Campaign Bureau, stated that during the past twenty months, the Kips Bay Neighborhood Association had made 42,193 visits and revisits to 7,247 buildings, reaching 39,394 families. The owners of the buildings employed 2,786 men for a total of 46,086 working days, paying them more than $200,000

The scrupulous care with which the inspections were carried out is evidenced by the fact that in one instance, the owner of a paint store was refused the certificate of compliance because he had repainted only the inside of his store and had not repainted the exterior.

All Sorts of Backers

In addition to the senior chambers of commerce, with which your National Clean Up and Paint Up Campaign Bureau works both directly and through the Chamber of Commerce of the United States, which co-operates through its bulletin service, Harry J. Krusz, executive secretary of the United States Junior Chamber of Commerce, again reported that practically all junior chambers of commerce in the United States conducted clean up and paint up activities in 1933, either directly or in co-operation with senior chambers.

"There seems to be more interest in the clean up and paint up activities this year than ever before," says Mr. Krusz.

The Tennessee Valley Authority, which includes functions affecting community life in the several states in which it operates, has obtained plans for the conduct of clean up and paint up campaigns from our bureau, and has expressed interest in utilizing them in its large territory.

Cooperation with the National Fire Protection Association in which our National Clean Up and Paint Up Campaign Bureau holds a full membership, continued to be of high practical value in putting on local campaigns with the aid of fire prevention organizations.

Edgar G. Harris, publisher of the West Point, Miss., Times Leader, wrote:

"Please send us all of the newspaper mats available, for use in both text and advertising, for the forthcoming clean up and paint up campaign.

"Our campaign last year was so successful that West Point has received the commendation of fire insurance rating bureaus, and we are hoping to get a reduction in fire insurance rates as a result of this work. Thank you for your splendid cooperation."

In Parkersburg, W. Va., a reduction in fire loss in 1932 of $107,485.67 was largely attributed to the clean up and paint up campaign, and gave impetus to the 1933 activities.

The issuance by Governor Landon of Kansas of a statewide clean up and paint up proclamation exemplified a practice which is followed in a number of other states.

In Leavenworth, Wash., a committee was organized to get landlords to furnish delinquent tenants with paint and varnish, and to credit them for painting the properties.

In 1933, our National Clean Up and Paint Up Campaign Bureau has co-operated to the limit of its facilities with renovize and other property modernizing campaigns.

A feature of the campaign was the extension of activities to industrial plants. For example, the American Steam Pump Company of Battle Creek reported repainting approximately fifty motors, sev-

eral offices, and signs and top dressing the factory roofs.

The Neoshoe (M.O.) Democrat, in a front page statement, said:

"Although when this newspaper sponsored this drive, it felt sure of some support, yet we were absolutely bowled over by the enthusiastic cooperation which we have received on every hand."

Paint Clubs' Cooperation

Paint clubs cooperated vigorously in furthering local campaigns in practically all of the large paint club centers.

The Paint and Oil Club of New England made mailings of clean up and paint up suggestions throughout the New England States, while the Boston Advertiser issued a special broadside on the clean up and paint up campaign.

The Chicago paint club covered the region adjacent to the city in helping to inspire clean up and paint up campaigns after the Chicago model, in the cities and towns through which visitors to the Century of Progress Exposition would pass.

Notable detailed reports were sent to our bureau from Buffalo, Chicago, Cleveland, Detroit, Pittsburgh, San Francisco, St. Louis and other large cities in which the paint clubs supported the campaign.

Trophy Cups Awarded

Trophy cups for the best campaigns in 1932 were awarded in 1933 to the cities of San Francisco, Cal.; Denver, Col.; Chicago, Ill.; Ashland, Ky.; New Orleans, La.; Hamtramck, Mich.; St. Cloud, Minn.; St. Louis, Mo.; Manchester, N. H.; Pittsburgh, Pa.; Lubbock, Tex.; Salt Lake City, Utah, and to the Kips Bay Neighborhood Association of New York City.

Radio was used freely in all campaigns in cities in which radio broadcasting stations were available. Radio dialogues between prominent citizens were staged with marked success. In some of the larger cities, clean up and paint up messages were broadcast not merely once a day, but several times a day for a week or more, from several stations.

An example of newspaper cooperation:—

Memphis newspapers published sixty-eight news articles on the clean up and paint up campaign, including eleven editorials and four cartoons, which covered a total of 677 column inches of space.

The Wichita (Kan.) Eagle, in asking our bureau for its 1933 service, said:—

"Please send us by return mail all available information and selection of mats. We are planning our third annual clean up and paint up campaign and want to make it the biggest one yet.

"In 1931 we were able to produce sixteen pages, and in 1932 another nice-sized section. We are now hoping to get out another large section."

The National Editorial Association offered to mail clean up and paint up material to 3,500 newspapers at its own expense, with the provision that the circular matter be furnished by the bureau.

A telegram dated March 10, during the nationwide closure of banks, from the Junior Chamber of Commerce of Battle Creek, Mich., read:—

"Thank you very much for sending us clean up and paint up material. Made marvelous impression tonight's meeting. Battle Creek Junior Chamber of Commerce voted unanimously to adopt this project."

At the same time, the Michigan Retail Hardware Association asked our bureau for plans for a statewide clean up and paint up campaign to cover all cities in Michigan, large and small.

In Detroit, the campaign was sponsored by the Detroit Board of Commerce and the Detroit Civic Pride Association, an organization of 1,200 women, supported by the Fair and Square Club of the Detroit News, an organization of approximately 46,000 membership of boys and girls between the ages of ten and sixteen, with the general cooperation of the Detroit schools, and the radio stations.

Letters from representative newspapers and chambers of commerce carry many praises for the service of the National Clean Up and Paint Up Campaign Bureau. For example, H. M. McCloskey, manager of local display advertising of the Courier-Journal and the Louisville Times, Louisville, Kentucky, says in a letter to our bureau:—

"I do not know of any central bureau that does as good a job as yours. More power to you!"

Cooperation of Trade Journals

Your committee extends its thanks to the trade journals of the industry for their splendid support of the clean up and paint up campaign in 1933!

The very successful inauguration of an all-the-year-round clean up and paint up campaign with quarterly inspections and awards of certificates of merit which was inaugurated in New York under the sponsorship of the Kips Bay Neighborhood Association, is being extended to Yorkville and other sections of New York to the north of the Kips Bay district, and the all-the-year-round idea is gaining ground in other cities.

The circulation of the "Business Getting Manual" and the "Special Manual" issued by our National Clean Up and Paint Up Campaign Bureau, with its extensive check list of suggested jobs is being continued.

Single copies may be obtained free by writing to the National Clean Up and Paint Up Campaign Bureau, 2201 New York avenue, N. W., Washington, D. C.

A contracting painter writes:—

"The 'Business Getting Manual' has helped me in getting work. I appreciate it and thank you for it."

In many of the successful local clean up and paint up campaigns, only approximately 10 percent of the aggregate cost of promotion is paid by paint and varnish interests. The remainder is contributed by interests outside of the paint and varnish industry.

Recommendations

The following recommendations are made by your committee:—

1. That the peculiar value of the National Clean Up and Paint Up Campaign Bureau as a civic and not a commercial institution in the eyes of the public continue to be carefully guarded by our organized industry, and that care be taken to avoid confusing it with strictly commercial activities, in order that its essential profit to our industry may be preserved.

2. That our National Clean Up and Paint Up Campaign Bureau be immediately financed to a degree which will permit an immediate renewal in new designs of its newspaper service, its display material and its literature for civic appeal—all of which have not been used to the limit in furtherance of economy.

3. That an increased travel allowance be provided which will enable the executive secretary to personally contact important cooperating organizations in cities outside of Washington, and to attend and present exhibits at important conventions of such organizations for the purpose of furthering and strengthening the campaign.

Recommendation

R. A. Plumb:—In our report for those of you who have read it, we have some recommendations. I want to submit only recommendation No. 1 at this time, which reads as follows:—

That the peculiar value of the national clean up and paint up campaign bureau as a civic and not a commercial institution in the eyes of the public continue to be carefully guarded by our organized industry, and that care be taken to avoid confusing it with strictly commercial activities in order that its essential profit to our industry may be fully preserved.

Dudley Figgis:—I think we owe a debt of gratitude to Dr. Plumb not only for his presentation today, but for the work which he has done in past years in the interest of Clean Up and Paint Up, and I think it should be noted in the record that the original deed of gift for clean up and paint bureau or campaign from Mr. Clark carried with it, as I remember, a condition that it should be kept separate and not be confused with any other activity of a promotional character.

I move the acceptance of the report, with its reference to the incoming executive committee.

President Matlack:—You have heard Mr. Figgis' suggestion and motion. Do I hear a second?

(The motion was seconded by Mr. Daum and carried.)

President Matlack:—Dr. Plumb, I personally wish to extend to you from the entire convention, including those who have already left the room, their great satisfaction for the amount of work that you have done, the work that you have accomplished, and the work that has gone on record for the last eight or ten years from your absolutely undaunted courage and ability to work in the public service.

Report on Legislation

President Matlack:—We have another committee report. We have one other especially important committee at the present time. With conditions in Washington as they are and with conditions in state legislatures as they are, our legislative committee is one that has to be eternally on the lookout, both in Wasington and in the state legislatures. We have, as the chairman of that committee, a congressman, the son of one of the founder members of our association, and one who has given a large part of his time for the National Paint, Oil and Varnish Association. It gives me great pleasure to call on Mr. Somers not only for what he is doing himself, but also for what we owe his father, who worked in that same line. Honorable Andrew L. Somers!

Mr. Somers' Report

Andrew L. Somers: As the president has very well stated, we have had an exceedingly interesting period. However, the hour is late, and while I might otherwise be tempted to go into a general discussion of some of the legislation that has been passed, and especially some of the legislation that we anticipate in the future, particularly that concerned with currency, I think it might be better if I confined myself to the report of our activity during the last year, and that I shall do by reminding you that since our last convention, we have passed successfully through a very trying and busy legislative period. Forty-three legislatures were in regular session, as well as the Congress. State administrative departments have not been quite as active the past year, perhaps due to enforced economies. The most important work before your committee was state legislation. No decrease in the introduction of bills was observed, and the same vigilance was necessary as in normal years.

In the latter part of 1932, just preceding our annual convention, it was learned that a bill had been prepared for introduction in the approaching session of the Wisconsin legislature, to compel the licensing of contracting painters, journeymen painters, and apprentices, under the jurisdiction of a State Board of Examination.

The industry had, in the past, expressed disfavor toward this type of legislation. During the 1932 convention there was a brief discussion of the requirements of that tentative bill and disapproval was registered.

After adjournment it came to our attention that bills of similar or somewhat similar purport were being prepared for introduction in numerous states as soon as their legislatures were convened in the early part of 1933.

At this stage of development in connection with the bills prepared for early introduction in other states, it was thought advisable that the representatives of our particular industry and a committee of the master painters meet and discuss the possibility of reaching a compromise on some of these measures. However, the educational bureau have definitely decided that we should not under any circumstances encourage the passage of those bills. So your legislative committee, as I shall state in the printed report, opposed these bills and tried to discourage their passage wherever it was possible. I do not want to take the time now to read the various resolutions that were presented in connection with our meetings, but I will simply say that at the joint meeting of the two special committees held in New York March 1, 1933, the decision of the educational bureau was presented to the master painters committee,

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Andrew L. Somers
Chairman of Legislation

and a special committee report was read giving the reasons why the industry could not support such bills as were desired by the master painters committee, but reluctantly we would find ourselves necessarily opposing this legislation.

Sees Solution of Differences

It is my personal belief that the differences that have separated these two organizations in the past are about to be eliminated through the acceptance of the codes that we are preparing. I am quite confident that if these codes are accepted by the President of the United States as written today, much of the need for this legislation will be eliminated, so that next year I doubt if we will have the same problems presented to the legislative committee that we have had in the past.

The New York State Department of Labor's proposed code on spray finishing or refinishing of motor vehicles, which was started in December, 1927, is still pending.

Your committee during the past year has conducted the usual volume of correspondence, responding to inquiries or requests for advice by members, pertaining to legislation.

We wish, however, at this point to bring one thought to your minds. We would like to impress upon you, and especially the members of local clubs, the necessity of keeping us constantly advised of these various movements. It is rather difficult sometimes from our position to keep our fingers on the various movements that are going on by many of these associations, who feel that legislation of this sort is necessary, and if the members would simply keep in mind the necessity of informing us whenever they hear of anything of that sort, our committee would be most appreciative.

The expenses of the joint legislative committee for the year 1932-33 amounted to $1,056.86, which includes $461.25 paid to the legislative reporting agency employed under contract, the remainder being for traveling expenses, stationery, postage, et cetera.

Your committee recommends that its appropriation for expenses during the ensuing year be $500 from each association instead of $750 each, as has been customary in the past.

The members of your committee desire to express their thanks to the headquarters staff and to the local paint clubs for their cooperation during the past year, and your chairman would especially like to call attention to the assiduous manner in which the vice-chairman of this committee and the three gentlemen who have served with us, that is, Mr. Pitt, Mr. Rice and Mr. Shannon, have given of their services to protect the interests of this organization. I think I may well bespeak the thanks of this organization to them, and assure them that we appreciate everything they have done and I, as chairman, look forward to a pleasant relationship in serving next year if it is my good fortune to do so, and assure you that we shall endeavor to give the same time and interest as we have in the past.

President Matlack: Mr. Somers, it is certainly our loss that your report of necessity came so late in the day and we were deprived of hearing the valuable information and the interesting experiences that you have had. However, we do appreciate the amount of time and interest that you have taken, and your willingness to continue on this work, and it is a great pleasure to feel that we have members who are willing to give of themselves freely and willingly for the work of this great association. It is with a great deal of pleasure that I extend to you the thanks of our entire association.

Owing to the great loss which we have sustained, three members were appointed to draw up resolutions to present at this meeting, in the loss of our general manager, George V. Horgan, and our past president, Roy D. Robinette. Mr. Caspar was called home and Mr. Keister will present those two resolutions.

Memorial Resolutions

Mr. Keister: I have presented many resolutions during my long business experience before different organizations, some of them serious, some sad, and some otherwise, but I don't think I ever presented a resolution that has filled my heart with greater sadness than the two I am about to read.

Mr. President, I should like to read both of these resolutions before any action is taken. At the end of the reading, I will explain my reason.

George V. Horgan

Whereas, God in his infinite wisdom has removed from our midst our beloved associate and late general manager, George V. Horgan, and

Whereas, we are deeply sensible of the loss of his wise counsel, and

Whereas, more particularly are we conscious of the loss of the man—our friend, therefore, be it

Resolved, That the members of the National Paint, Oil and Varnish Association in convention assembled in Chicago record their recognition of the irreparable loss they have suffered in the passing of George V. Horgan, whose qualities of friendship will long be an inspiration to us; and be it further

Resolved, That this memorial be spread upon the records of our association and that an engrossed copy thereof be sent to Mr. Horgan's family.

Roy B. Robinette

Whereas, the shadow of death has taken our beloved friend and fellow member, Roy B. Robinett, and

Whereas, in the passing of our associate the paint, varnish and allied industries have lost a distinguished leader who has played a definite part in the upbuilding of the National Paint, Oil and Varnish Association, and

Whereas, more especially, are we conscious of the loss of those fine qualities of friendship which he so generously contributed, therefore, be it

Resolved, That the members of the National Paint, Oil and Varnish Association in convention assembled in Chicago hereby record their recognition of the irreparable loss they have suffered in the death of our past president, Roy B. Robinette, whose character will long remain an inspiration, and be it further

Resolved, That a copy of this memorial be spread upon the permanent records of the association and an engrossed copy thereof be sent to Mr. Robinette's family.

Mr. President, the suggestion I have to make, knowing as I do and you do, the tender friendship which existed between these two men for so many years, and how they worked together as one man for the upbuilding of this association, is that I think it might be fitting and proper for this association to approve these resolutions as one because of that close relationship. Therefore, I make that motion.

President Matlack: It has not been often that we have been called on to receive and pass on resolutions so closely connected with members of this association who have given freely of their time and service and interest. You have heard the motion made by Mr. Kiester that they be considered as one and treated as one. Do I heard a second?

The motion was seconded, put to a vote and carried.

President Matlack: Thank you, Mr. Keister, and your committee for so ably drawing these reports.

Horace S. Felton: I have a resolution which I should like to present at this time, with your permission.

Resolved, That the convention ratify all actions, appointments and resolutions of the executive committee and board of directors of the association during the fiscal year just closing.

I move the adoption of that resolution.

(The motion was seconded by Mr. Keister, put to a vote and carried.)

President Matlack: So far as we know, there is no unfinished business. Is there any new business?

Men, before we go, it rather brings a feeling of regret that an association that has been founded on a rock foundation has come to an end. The work that has been carried on by the National association is finished. It will be passed over to the incoming organization that will take hold tomorrow morning. At the same time, those who started the National, who fostered it and brought it forward, love that association, and it was with a great deal of grief and feeling of sorrow that they realized that the progress of time has made it necessary to lay it down.

Gentlemen, I ask for a motion to adjourn.

(Upon motion, regularly made and seconded, the meeting was adjourned at 4:45 p.m.)

(The following reports in a printed pamphlet were distributed to the members.)

Report on Arbitration

There have been no matters submitted to the committee on arbitration during the year just closed.

Report on Chamber of Commerce, U. S. A.

Your committee was represented at the twenty-first annual meeting of the Chamber of Commerce of the United States held in Washington, D. C., May 2 to 5, 1933.

The first duty of your councillor pertained to the election of directors to the board of the U. S. Chamber of Commerce, and this was handled as discreetly as possible, though there were some conflicting recommendations from members of our own industry, and your chairman thinks members of our industry should refrain from asking the national councillor to support any given candidate unless such candidate has the endorsement of our own executive committee.

As many group meetings as possible were attended by your national councillor and there were many subjects discussed pertaining directly to our industry, as for instance, property maintenance and improvement, national transportation policies, American trade associations, and many other subjects, which were very timely and well presented by speakers designated for that particular subject.

Considerable discussion and interest developed over the then agitated thirty-hour week by our national government, which was, of course, later put in the discard, and there developed in its stead, the national recovery act, which has since become a law.

The United States chamber gave particular emphasis to the importance of properly functioning trade associations and in this respect our own industry had nothing to be ashamed of.

The United States chamber's activity in governmental matters has been very outstanding, and, we are confident, contributed largely to the passing of many constructive laws that are now in effect. We think our industry should encourage very close relationship, by its members, with the United States chamber in its many activities.

Report on Code of Ethics

Your committee deems unnecessary any revision in our present code of ethics.

Local clubs, however, should be urged to impart to its old and new members a clear understanding of the full intent and value derived from strict adherence to the code of ethics and the principles therein.

Reading of the code at all paint club meetings is strongly advocated, or recommended, in order that each and every member may be constantly reminded of the existence thereof, and use as a goal for the conduct of good business.

Report on Export and Foreign Trade

Our exports of pigments, paints, varnishes, enamels and lacquers totalled $10,365,626 for the year 1932, as against $15,126,846 for the year 1931, or a decrease of approximately 31 percent. The decrease in our exports between the years 1930 and 1931 equalled approximately 30 percent.

During the first six months of 1933, exports of these products totalled $4,834,338 as against $5,516,184 for the corresponding period in 1932, or a decrease of approximately 12.3 percent. This compares with a decrease for the same period between the years 1931 and 1932 of 34.2 percent.

Unsettled world conditions, import restrictions, exchange control, and general unfavorable conditions existing abroad account for the further decrease in our exports as shown above.

Report on Flax

The September government estimate indicates a flaxseed crop of seven million bushels, which is the smallest out-turn in forty-two years.

While the acreage planted was less than usual, the main causes of this exceedingly short crop were drouth and grasshoppers.

The excellent work of the Flax Institute of the United States was reflected in the fine quality of flaxseed harvested in those areas of Minnesota and North Dakota where growing conditions were at all favorable. Steps are being taken to insure the retention for seeding purposes next Spring of a sufficient quanity of such seed.

It is noteworthy that the farms of the Red River Valley and southern Minnesota gave us most of the flaxseed that was harvested this year. These are the older farming sections of the Northwest, where crop rotation is generally practiced.

Our old flax development committee and its successor the flax institute have consistently advocated careful selection of land suitable for flax, and a planned rotation that includes flax. The adoption of these methods on old-established and well-managed farms has saved us from a complete failure of the flax crop this year.

A copy of a report of the flax institute is available and we suggest a careful reading of it by all those interested in linseed oil.

Report on Flax Institute

The Flax Institute of the United States is a correlating agency fostering flax research in the agricultural colleges and experiment stations of the United States and in the United States Department of Agriculture. This report is a brief review of recent accomplishments.

McKee (agronomist, Montana station), reports high yields of flax on irrigated land in the rotation, alfalfa three years, corn, flax, sugar beets. He finds flax-wheat mixtures advantageous on irrigated land at Bozeman but not on nonirrigated land.

Arny (associate agronomist, Minnesota station), reports extensive variety testing and breeding work. Bison and red wing are the two leading farm varieties in Minnesota, as far as yield and other considerations are concerned. He notes that red wing is smaller seeded and one to two percent lower in oil than bison. Arny reports the bison variety unsatisfactory under Minnesota conditions from the point of view of the drying quality of the oil but notes that other workers elsewhere have found bison satisfactory. Breeding studies at Minnesota are in progress on the inheritance of the drying quality of

F. C. Smith
Chairman on Flax

linseed oil and the possibility of linkages between this characteristic and seed size, oil content, etc.

Klages (South Dakota station), has imitated the effect of hail on flax and reports the first study of the kind showing the probable effect of hail injury on flax at different stages of its growth. Hume, of the same station, reports extensive studies on the use of flax in crop rotations.

Hopper (agricultural chemist, North Dakota station), and Dillman (associate agronomist, U. S. D. A.), are preparing for publication the results of an extensive investigation upon the influence of climate on the yield and quality of linseed oil. Their study covers six crop years with four varieties from an area ranging from Mexico to Alaska. This study when completed will be one of the most complete studies of the influence of climatic conditions upon crop quality ever reported. Hopper, North Dakota station, has under way a project studying the deposition and desaturation of the oil with the advance of maturity of the crop, using varieties grown at Bozeman, Mont; Mandan, N. D.; Fargo, N.D.; and St. Paul, Minn. The constituent fatty acids are being determined in this study. The varieties are being harvested at from two to four days' intervals.

Bolley (North Dakota station), pioneer flax investigator, is continuing his flax breeding investigations with the material obtained on his South American trip. Careful studies of the oil content and quality of the flax of this origin are being made by Hopper and coworkers.

Flor (associate pathologist, U. S. D. A.), assigned to the North Dakota station, is giving special attention to the less well-known diseases of flax such as pasmo, leaf rust, and browning. He has a report in preparation on the physiological specialization of leaf rust.

Stoa (North Dakota station), is continuing extensive studies on flax in crop rotations and upon the agronomic quality of new and standard flax varieties.

P. J. Olson (North Dakota station), is undertaking new and extensive studies in the genetics of flax.

The Flax Institute, through its secretary, J. S. Milloy, and other officers, is maintaining constant contact with the U. S. D. A. and the several administrative units which have been set to deal with agricultural and industrial problems affecting flax. In the course of the year special information has been provided to the proper authorities on such problems as the flax tariff, the effect of competing oils, and on the necessity of concerted State and governmental action on the control of the grasshopper, the most serious insect pest of the flax plant. The importance of flax as a replacement crop to take the place of crops now on an export basis, is being urged upon the national administration.

Present and Future Needs

The quality of linseed oil coming from imported seed or imported oil is such that the American flaxseed grower must be provided with flaxseed of better quality if North American flaxseed is to maintain its prestige. Under the generous support of the linsed oil and related industries the flax crop has been saved to North America through the conquering of the serious flax wilt disease. Unfortunately, some of the high yielding varieties of flax produced in that conquest are not the most satisfactory from the point of view of the quality of their oil. This means that funds must be provided to support research which will furnish to the American flaxseed grower a flax which can be more certainly depended upon to yield a high quality of linseed oil. The laws of inheritance must be discovered and the proper crosses made. This work can be done. The techniques are known. It requires financial support and constant chemical checking through the use of thousands of oil analyses. The four experiment stations in the principal flax-growing area have had their appropriations seriously cut. As an example the State of North Dakota, which used to make liberal appropriations to supplement federal appropriations made no appropriation for agricultural research at the last session of their legislature. Other States are in nearly the same condition. Flax needs friends at the present time and those friends ought to be found in the industries. As president of the Flax Institute I should like to enroll every member of the flaxseed consuming industries as a friend of flax research.

Report on Manufacturers

During the past year it has been my privilege to have associated with me in the work of the manufacturers' committee a group of twenty-four men, all specialists in their particular field. These men have been observing the various trends which are taking place in their industry and our committee has been making periodic reports to you through the N. P. O. & V. A. Bulletin. The final reports which are appended below give the latest information which is available. The statistics which are contained in several of the reports will prove valuable over the course of the years as well as being vital at this time. Much time has been spent in the preparation of these reports and I desire to express my sincere appreciation of the fine spirit of co-operation which the chairmen of the subcommittees have given. I bespeak your interest in the efforts which they have exerted.

Industrial Alcohol

During the current year your committee found it necessary to devote its time largely to the subject of laws and regulations affecting the use of alcohol in our industry. In that gneral behalf it suffices to say that satisfactory conditions have been maintained. There have been no changes in denatured alcohol formulae in which we are interested.

One development is worthy of special note:—In a message to Congress, dated June 10, 1933, the President consolidated the Bureaus of Industrial Alcohol and of Internal Revenue of the Treasury Department in a new Division of Internal Revenue of the same department. While such consolidation was to become effective sixty-one days from the date of said message, the President, by subsequent executive order, authorized the Secretary of the Treasury to perfect same at any time in his discretion prior to December 31, 1933. At the date of the submission of this report, the Bureau of Industrial Alcohol in the Treasury Department continues to function as a separate unti under Commissioner James M. Doran, who has pursued his policy of conferring frequently with representatives of scientific and commer-

Charles A. Darby
Chairman on Brushes

cial interests in an effort to satisfy the needs and requirements of legitimate business.

The effects which the repeal of the eighteenth amendment to the Federal constitution would have upon the status of industrial alcohol is receiving your committee's close attention.

During the past few months your alcohol committee has been addressing itself to the question of premiums exacted by surety companies under alcohol bonds, required to be filed by our members, and is hopeful of having them reduced in all cases where the facts warrant such action.

Brushes

Past

The experience of the paint and varnish brush industry during the past two years or more has been similar to that of practically all other industries, in that adverse conditions have resulted in a greatly restricted demand for quality merchandise and increased demand for cheaper goods, a condition creating an unprecedented competitive situation.

Many manufacturers striving for volume honors, unable to further reduce productive costs, have resorted to offerings of some items below actual factory costs, hoping sales would include sufficient profitable items to strike an average that would at least avoid a loss.

Present

Relative to the brush industry itself—In order that manufacturers may maintain a healthy financial position, brush prices must advance.

Misinformation has been broadcast regarding bristle costs that has been unnecessarily disturbing to the trade and has materially assisted in creating discontent of brush buyers of both large and small quantities.

Recent bulletins from what should be authentic sources reported that bristle prices now were lower in price than a year ago, when the facts are that bristles of all classes are very much higher than at that time.

The reasons:—

(a) Chinese bristle prices directly affected by higher prices of silver and strengthening of Chinese exchange. In other words, depreciation of the American dollar in world markets.

(b) Increased consumption by brush manufacturers the last five months showing a volume for exceeding the same period in 1932.

C. K. Williams
Chairman on Earth Colors

(c) Russian bristles, due to hog culture, rapidly diminishing in quantity and quality. Controlled by the Soviet government, very radically marked up in price and available to American manufacturers only through Amtorg.

One must bear in mind that bristle costs per pound on its arrival at the factory must include boiling processes to remove all adherent matter, shrinkage in weight due to this operation, dressing of stock and assorting for resiliency, etc.

NRA responsible for greatly increased labor costs of brush building has, together with general advances, affected all other materials entering into their construction. Handles, ferrules, setting compounds, boxes, and other items, yet there has been no commensurate advance in the price of finished brushes, because up to the present ime competition has prevented anything like a proper price adjustment.

This condition cannot continue indefinitely and, undoubtedly, the operation of the code will help materially to remedy the situation.

Future

Every indication points to greatly improved conditions. Master painters and decorators, dormant the last two years or more, have this fall season shown a very considerable movement and the coming Spring promises for them a resumption of something akin to old-time activity.

Four years of adverse conditions have created an abnormally large potential demand for painting jobs.

Painting must be done for preservation, and pride in appearance strongly dominates, consequently much paint and many brushes will be used in the near future.

The opinion is general that 1934 will be a banner paint and brush year.

Dry Colors (Earth)

The dry color industry throughout has consented to fall in line and co-operate with the present Federal administration under the national recovery act. Codes have been drawn up and agreed upon by the various branches of the industry and, although some of these have not been formally accepted, employment has been increased, working hours have been shortened, and wages increased.

For the most part, although prices have a firmer tone, there have been but few advances over the schedule quoted throughout the year. What advances have been made have been due to the United States going off the gold standard internationally.

Several new fillers and colors have appeared on the horizon in the past year which are receiving recognition, among which are highly refined diatomaceous earth and chemically treated precipitated chalks. Both of these pigments are being used extensively for flatting and extending, respectively.

Substantial improvement in the color and tone of black oxide of iron has been made. This pigment can be used to advantage in anti-corrosive bridge, car and general outside black paints. A high strength blue-tone carbon black, manufactured under a patented process, has proven its economy in the field of tinting pigments. The peculiar hue of paris green is now being duplicated with a non-poisonous, more durable chromium hydroxide combination with zinc or cadmium yellow.

Although the dry color industry has suffered the reverses of adverse economic

conditions, as have most other industries in this country in the past four years, it is in a reasonably stable condition and looks forward with confidence to rapid development and more prosperous times.

Colors (Chemical)

The chemical color industry during the early part of the year was not busy, but in April orders began to come in with a rush, and since that time practically every color plant has been operating to capacity, so much so that while it looked in the early months of the year as though the industry would show a decided shrinkage

Arthur Brown
Chairman on Chemical Colors

in sales for this year as compared with 1932, it now appears that there will be an increase of nearly 25 percent in business, unless there is a decided slump the next month or two. There has been a marked falling off of business during September as compared with the two or three previous months, but this was to be expected, because May, June and July were so abnormal and compared very favorably with the best months even in the boom years. While it is hardly to be expected that the industry will again enjoy as much business as we did prior to the slump for some time to come, nevertheless a different atmosphere now prevails, and there is no question but that the turn has come and that a gradual increase in business will be experienced.

The national recovery program has, of course, increased very materially the labor costs of all color manufacturers, and has added to their problems in other ways. Prices were not advanced to offset these added expenses, because practically all consumers were under contract for the calendar year. It is too soon to prophesy what prices will be for next year, because the NRA program has not been in effect long enough to definitely indicate its influence on costs and this year those manufacturers who supply raw materials to the color industry are reluctant to announce their prices, so it is probably that it will be some time in November before prices for next year will be available.

Containers

It is quite evident that there is a decided trend toward simplification and standardization in the container item throughout the paint and varnish industry. This is a very satisfactory condition.

S. L. Buschman
Chairman on Containers

The decision to use the standard "triplitite" cans for the packing of colors in oil has also proven an economical venture with consumers of this type of can, for the reason that it reverts to the standard or stock package. No other changes or developments in the container field have been noted.

Gums (Imported Varnish)

The demand for varnish gums has shown a considerable increase the past year, and while there has been quite an advance in prices, it has been largely due to the depreciated dollar against foreign exchanges, and as the first costs in the primary market are not materially higher, prices are still cheap and well below the 1930 period.

The research laboratories engaged by the American Gum Importers' Association have made exceptional progress the past year and results obtained confirm the conviction that where the paint, varnish, lacquer and kindred industries have substituted other materials for natural varnish gums, they have missed an opportunity of getting an improved product at a lower cost.

Contrary to general belief, quick drying varnishes made with natural gums on a regular formula and without additional quantities of dryers, dry "tack free" in two to two and one-half hours, against synthetics from similar formulas in two to three hours, and finished panels on exposure rack stand the weather tests very much better than the well-known brands of varnishes on the market.

While the association is not quite ready to publish its data, it hopes in the near future to release to the manufacturing trade the results of experiments and tests so far obtained, that interests involved may profit from the information secured to the mutual benefit of the industry.

Lead

Stocks of pig lead in producers' hands have declined sharply during recent months. Notwithstanding curtailed production, these stocks increased from 151,000 tons at the end of 1931 to 197,000 tons at the end of May, 1933. At the

H. E. Hendrickson
Chairman on Varnish Gums

end of August, the latest figures available, they were 160,000 tons with a further decrease expected when the September figures are published around the middle of the month.

From another angle, the same marked improvement in the general situation is reflected, namely, the reports of pig lead sales by the Lead Industries Association. The average sales during 1932 were slightly over 24,000 tons per month, the low point for the year being December, with 17,191 tons. The approaching banking crisis was reflected in the sales of only 12,800 tons in February of this year. Since that time they have been as follows:—

	Tons.
March	28,818
April	29,759
May	34,935
June	37,115
July	26,571
August	24,634
September	37,652

It is to be noted that the buying in September slightly exceeded the heavy buying which took place last June. The classification of lead shipments shows a marked improvement in consumption for all branches of the trade, with the exception of the cable industry.

Linseed Oil

The production of linseed oil in the United States for the year ending September 30, 1933, was about the same as the previous year, being in round figures 363,000,000 pounds against 364,500,000 pounds for the previous year or a difference of less than one-half of one percent. This is approximately 44 percent of the 1928 production. Business was much better, however, in the third quarter ending September 30, 1933, as is shown by the fact that production during that quarter was 60 percent greater than production in the same quarter of 1932. The figures for consumption are not yet available but from such information as is to be had it appears that consumption and production have been very nearly equal, and that stocks of linseed oil on hand are about the same as last year at this time.

Linseed oil reached a price of 4½ cents per pound delivered in zone three during the Summer of 1932 and flaxseed reached the low price in Duluth of 90 cents per bushel and Argentine seed declined to 55 cents per bushel. This price of oil was below cost and is the lowest price since 1897 when linseed oil was sold at 25 cents per gallon or 3⅓ cents per pound in Chicago and flax was 63 cents per bushel in Chicago equivalent to 53 cents per bushel in Minneapolis or Duluth.

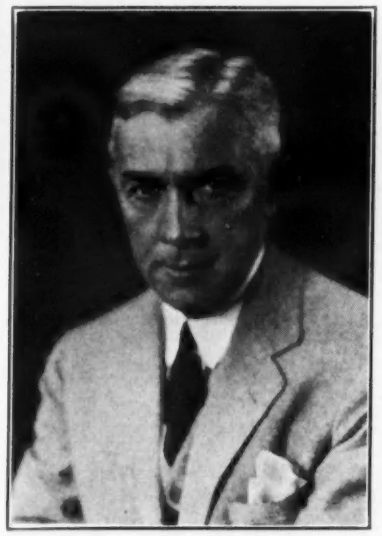
The period from March 31, 1932, to September 30, 1932, was the period of lowest production during the depression. During this period, the total production was only a trifle over 34,000,000 pounds or the equivalent in seed of only 14,000,000 bushels per year or approximately 33 percent of the 1928 production, and this is the lowest production of linseed oil in the United States in thirty-four years.

During the Summer of 1932 purchases were also at low tide and much below deliveries of oil. From September 30, 1932, to the last of April, 1933, deliveries were larger than sales but from the last of April to September 30, 1933, sales have exceeded deliveries. For the year ending September 30, 1933, we estimate that sales were 18 percent greater than deliveries indicating that consumers are covered on the average two months farther ahead than normal, based on the rate of consumption for the past year, which would be equivalent to about one month of a normal year. The increased buying was without doubt because of the low prices prevailing early in the season and in anticipation of inflation from March forward. Linseed oil is still the cheapest vegetable oil in Europe and consequently should be in good demand unless prices should advance out of proportion to the price of other vegetable oils.

During the past few years, there has been an increased tendency to substitute cheaper oils in place of linseed oil. The price of linseed oil has been comparatively high as compared to substitutes because of the high duty on flaxseed and the low duty on some oil substitutes, and no duty on others and the higher cost of labor and materials in this country than in European countries and especially the Orient from which the principal substitutes come.

The sale of American oilcake in Europe is becoming increasingly difficult because of duties and restrictions. Both England and Belgium have a duty on oilcake, France and Germany have restricted importations, and Holland is considering placing a duty on oilcake and restricting importations. This is making it increasingly difficult for the United States crushers to compete with foreign oil because of the difficulty of disposing of their oilcake at favorable prices.

The NRA has increased further the cost of materials and labor and the mills are doing their best to carry on. However, it is obvious that linseed crushers cannot advance wages and pay higher cost of materials used and continue to compete with foreign linseed oil and substitutes which are produced with cheap labor and pay little or no duty. It is also obvious that to the extent that linseed oil is supplanted by other oils, the United States farmer will lose the income from the flaxseed crop which has been one of



S. French Reeves
Chairman on Lead

the principal crops in the Northwest for many years. The last estimate of the United States crop is only 7,400,000 bushels; the smallest crop since 1896 except the year 1919.

The United States government is now in the anomalous position of trying to help the farmers with a high duty on flax and at the same time permitting a small duty on or admitting free of duty nearly all the cheaper oils which are used for paint purposes or as substitutes for linseed oil. In this way, the farmer is being gradually deprived of the market for his flaxseed which the high duty on flax is supposed to protect. If this situation is not relieved, the farmer will gradually abandon the flaxseed crop as he has done in many states where flaxseed should be profitably raised; the crushers will be forced out of business and the government will neither get incomee nor other taxes from the crushers nor any duty on the flaxseed imported. Action should be taken by the Treasury Department and also Congress if the flaxseed crop is to be preserved for this country.

It is an interesting fact that several million bushels of Indian seed have been bought by the United States crushers during the past few months. It is generally thought that the seed was of a previous crop which had been stored for higher prices and was sold too fast for the English buyers; consequently, American crushers bought at favorable prices which seldom can be done. In fact, this is the first time in history that any large quantity of Indian seed has been sold to this country.

The Canadian flaxseed crop is estimated this year at 756,000 bushels against an average for five years of 2,548,000 bushels. The United States crop is estimated at 7,400,000 bushels against an estimated crop of 13,200,000 and a final crop of 11,841,000 bushels last year. The Argentine crop is estimated at a maximum, with favorable weather and conditions, of 50,000,000 bushels this year against Broomhall's estimate last year of 64,000,000 bushels and a final production estimated at 55,000,000 bushels. The Indian crop is expected, with favorable conditions, to be about the same as last year. Based on the latest estimates, where available, and figuring crops of the unimportant countries that do little or no exporting, the same as last year, indicates that the world's supply of flaxseed this year will be less than 80,000,000 bushels against over 99,000,000 bushels last year or approximately a 20 percent decrease. This would be an important difference if business were still at the bottom of the depression but with a country pledged to inflation, business much improved, and an increasing demand, it is a big factor which should not be overlooked by those

Robert Hursh
Chairman on Lithopone

who have not already bought a considerable part of their supplies and who expect to compete aggressively for business during the coming year.

Lithopone

The consumption of lithopone during the first quarter of 1933 was at a low ebb, in line with most commodities. However, beginning with the second quarter of this year, lithopone showed a decided improvement. The increased demand from the paint industry was most gratifying and encouraging, as it indicated that as conditions adjust themselves, the outlook for paint products is very promising. It is also interesting to note that the consumption of lithopone continued to increase up to the middle of the third quarter, after which the demand was somewhat easier. However, the sale of this product is still considered fair, with indications that it will hold at a satisfactory rate over the balance of the year.

Lithopone, with its many desirable characteristics, holds a unique position as a white pigment in its application to paint, and it seems certain that the total consumption in 1933 will be in excess of 1932.

Miscellaneous Oils

At the time of writing this report, Department of Commerce figures were available for the first eight months of this year. During this period imports of china wood oil were 68,740,000 pounds, compared to 52,383,000 pounds for the corresponding period of 1932. This is rather a substantial increase and was more apparent during the second quarter of this year when importations were 70 percent greater than the second quarter of last year. Imports

R. C. Stark
Chairman on Oils

during the first half of the year were 25 percent greater than 1932.

Perilla oil also showed a very large increase for the first eight months, totaling 19,268,000 pounds against 9,625,000 pounds for the first eight months of 1932. During July and August this oil was very scarce and prices advanced sharply to a point higher than linseed or chinawood oil. While there has been recessions of price during September and October, perilla oil

is still higher than either linseed or chinawood oil.

Miscellaneous oils participated in the general commodity price rise and consumption was especially heavy in the second quarter of the year. Recessions have occurred during the third quarter but average prices are still much better than 1932.

In our last report we mentioned the efforts made during the last session of Congress to place a duty on imported vegetable oils. Undoubtedly there will be similar agitation during the next session. The industry would be severely handicapped by a duty on oils essential to our

Wilmer H. Crawford
Chairman on Gum Naval Stores

operations, and which can not be produced commercially in the United States. While the domestic tung tree development is progressing satisfactorily, it will be some years before it can supply our needs.

There seems to be some growth in the use of sunflower seed oil and it is being rather freely offered this year.

Domestic soybean oil has been in good demand and prices have risen materially.

Naval Stores (Gum)

The naval stores industry has survived another year of unprofitable operation, and it has again been demonstrated that excessively low prices will not alone stimulate consumption during a period of economic chaos.

The consumption statistics compiled and released by the Bureau of Chemistry at Washington indicates continued decrease in the use of turpentine, while rosin shows only about 10 percent decrease.

From sources of information available, it is estimated that the crop year ending March 31, 1934, will show an increase in production of approximately 20 percent.

One of the continued outstanding needs of the industry is authentic statistics on production, consumption and stocks.

Insofar as our investigation reveals, there is practically no adulterated turpentine moving in interstate commerce, and no complaints of misgraded rosin, two aims sought by the paint and varnish industry in advocating the naval stores act be passed back in 1923.

Although a debatable question, we think, there are just about eight grades in the rosin standards which are superfluous, and it is hoped the Bureau of Chemistry will find it possible after thorough investi-

Arthur Langmeier
Chairman on Wood Naval Stores

gation and an opportunity has been given all interests to be heard, to promulgate new standards of say five grades, expressive of the colors in their dominant wave lengths and prepared from American-made glass.

Naval Stores (Wood Rosin)

The chief development during the year 1933 in the steam and solvent naval stores business has been the acceptance of paint and varnish manufacturers of dipentene for use in the new type resin finishes.

The development of dipentene for paint and varnish purposes has covered a number of years, and the product is filling a very definite need of the industry. New resins utilizing terpenes and terpene alcohols procured through the steam solvent process also made their appearance during this year.

There has been an increase in the production of pale wood rosins for consumption in the paint and varnish industry, and varnishes of excellent color and brilliance are now being produced from these products.

Steam distilled pine oil is finding wider use in the paint and varnish industry in small percentages for the production of superior flow.

At this writing, October 9, the two major producers of steam solvent naval stores have signed the blanket code and have submitted an individual code to the NRA.

Paint

Probably no better report could be made on what has transpired in the paint manufacturing industry during the past year than one which can be drawn from the graph published by the United States Department of Commerce, Bureau of Census, based upon the reports made to it by 588 manufacturers.

As was to be expected, the volume of business reflected the usual winter dip, but at a somewhat lower level than for the winter of 1931. The opening of 1933 was marked by an improvement over December, 1932, followed by severely disappointing results about the time of the banking crisis in February and March. Then, after the banking troubles had been ironed out to a great degree a marked upturn began in April, reaching its peak in June, after which a recessional movement took place, and is still in evidence, but at a level above that of the same period last year.

Too great emphasis should not be placed upon the unusually great activity in May and June as compared with the subsequent falling off. Much of what was done in the good period was prompted by an over-buoyant confidence that an industrial miracle had been wrought overnight, or the desire to stock up at the low prices then prevailing, and, conversely, any note of pessimism now apparent is prompted more by the failure to attain a hoped for

D. J. Devlin
Chairman on Paint

end than by actually unfavorable conditions. In fact, a study of conditions must convince one that they are undoubtedly better than they were a year ago, and that we shall see a gradual and sound upturn in the paint manufacturing business.

Plastic Paint

In the past years the activity of the group had been confined practically entirely to the question of plastic paints, and only a few manufacturers were interested. Beginning with this year the group extended its activities, and one of the first things it did was to carry on some activity with the Bureau of Standards in connection with water paints and government specifications.

With the approach of greater Federal government activity and control of business affairs, the group expanded its efforts, with the result that all known manufacturers of calcimine and water paints, whether members of the N. P. O. & V. A., or not, which, of course, includes plastic paints, were approached with the idea that if they wished to associate themselves more closely for the good of the industry, the plastic paint group, as set up by the N. P. O. & V. A. will be very pleased to serve through its chairman.

Then came the national industrial recovery act. The manufacturers, generally, responded whole-heartedly. One of the first considerations was that the name of the group was a misnomer, so it was agreed that we would petition the N. P. O. & V. A., and that henceforth this group be known as the "Water Paint Group." Such a petition has been presented.

There never having been combined efforts of the water paint manufacturers, the group set about the various industry problems with the idea of presenting to the national code committee proposed measures which would be of benefit. At the invitation of the general code committee a well-attended meeting was had in Washington when the general code items were considered and recommendations made by the group. At that meeting it became apparent that the group could offer for inclusion in the code standard specifications for containers of materials. The manufacturers present made suggestions and these were communicated to all known manufacturers in the industry. There was, later, a meeting in Chicago regarding the code and, specifically, the container specifications.

By means of letters and questionnaires a full recommendation was made to the code committee and has been included in the code. The general reaction of the group is that good progress has been made.

In three cities where there have been unusually trying conditions there have been group meetings of the manufacturers cerned, the idea being to establish confidence and mutual understanding for a betterment of conditions.

At the forthcoming Chicago national convention there will be a water paint group meeting at which time other problems of the industry will be considered and presented, looking towards further simplification of problems.

The recognition given the water paint industry and the representation accorded on the Paint Industry Recovery Board and other activities is appreciated by the group and makes it all the more desirous of putting its house in order and contributing what it can to the general good of the whole industry. There is no reason

S. C. Dunning
Chairman on Plastic Paint

why this group cannot function well and be of decided value to its members—and that is its intent.

Shellac

General conditions in the shellas industry have shown a decided improvement in recent months. Cheap shellac has undoubtedly stimulated its use as evidenced by latest official figures from India, showing an increase in 1933 of about 35 percent over the same period last year.

The decline last Spring established a new low record of about 7 cents per pound for TN, due to abundant supplies, less demand and depreciated exchange. With better business and higher exchange prices have gradually recovered and the trend now seems upward. The government in India continues its program to increase the supply and improve the quality of shellac to foster its greater use both here and abroad.

Spray Painting

Marked improvement has been shown in the last six months in business conditions affecting our lines. This has been predominantly so as to industrial finishing equipment. In the maintenance field steps toward recovery have not been quite as gratifying, yet there has been some increase in sales during that period. The continued low construction level has also tended to retard appreciable advancement in this division, which parallels closely the paint and varnish sales curve. We look for sustained improvement, however, in the industrial field, enhanced, perhaps, by preparations for the anticipated new models of standard passenger cars.

Our industry as a whole, has thus far weathered the depression, and we believe that having done so and with better business fairly predicted, the future for the products of our industry is very promising.

Varnish

During the present year there have been no requests presented to the varnish committee for service of any kind, which indicates the industry is either in a fairly favorable condition or there is a lack of interest on the part of our members in the functioning of this committee.

With the advent and continued development of nitro-cellulose lacquer products there was for several years a decided decrease in the consumption of the old line (gum and oil) varnishes, and varnish technicians devoted their efforts largely to lacquer problems.

More recently, however, due to the introduction of synthetic resins, and a vast amount of technical work and scientific research in the varnish industry; there was produced a type of quick drying varnishes with the results that many have discontinued the use of nitro-cellulose products in favor of varnishes of this type.

Naturally further development will take place in the realm of quick drying synthetic resin varnish; consequently, there seems to be a favorable outlook for the future in the way of an increased consumption of varnish products.

Your committee wishes to strongly urge the members of our industry to use the services of the varnish committee more frequently, for matters referred to this committee will have careful and thoughtful consideration and a satisfactory solution, of course, will benefit the entire industry.

Zinc Oxide

The application of zinc oxide in paint is so well known to the paint industry that

R. A. Guyer
Chairman on Spray Painting

there is no need to dwell further at this time on its merits.

Like most commodities, the demand for zinc oxide during the first quarter of 1933 was very light, and inventories of raw materials in the hands of the paint manufacturers were at a low point. However, in April of this year signs of increased activity began to manifest themselves, with the result that zinc oxide began to move into the paint industry in increasing quantities. This increased consumption continued well into the third quarter of the current year, when a slight falling off occurred. Nevertheless, the demand for this product continues at a satisfactory rate, considering the fact that we are now entering the season when the demand for paint is naturally easier.

If the demand for paint and paint finishes which occurred between April and the middle of the third quarter of this year is any criterion, then with any reasonable feeling of confidence on the part of the consuming public there should be an excellent market ahead for the paint industry, which in turn will create a greater demand for zinc oxide.

Report on Membership

No great progress was made by your committee in building up the membership of the association during the past year. In the main, our early efforts were directed to retaining our old members and in this we were fairly successful. New members came in to partially off-set our losses, and this state of affairs prevailed generally until early summer when the national recovery act was created.

The NRA points out the need, and has clearly shown why all business men should co-operate, with their particular trade association in order to share equitably in the "New Deal." When the codes are finally

P. P. Tillinghast
Chairman on Zinc Oxide

approved we are confident that very few eligible prospects in our industry will fail to become members of our trade association.

This year we asked the president of every paint club to serve as a member of our committee, and to thus establish a direct contact with his local membership committee. The local committee always

does the real work of securing new members and holding firmly to the old ones. This year we are confident they missed few opportunities to strengthen their local clubs and thus the national association.

The plan on the whole worked very well, and the national membership committee takes this opportunity of expressing to each club president, to each local membership committee chairman, and to all members of these committees, its appreciation of their activities throughout the year.

The final figures of our membership being part of the general manager's report we are not including them here.

Report on Memorials

It is the sad duty of the memorial committee to record the passing of many frfends who were with us this time only one short year ago. They have passed on to their well deserved reward, and their familiar faces have receded into memory —a memory bright, however, with the recollection of their accomplishments and unselfish service. Their number includes

George H. Priest, Jr.
Chairman on Memorials

one former President, Roy B. Robinette, and our first full-time secretary, later general manager, George V. Horgan. A stalwart brigade of loyal workers, they must be sorely missed, yet the memory of their leadership will remain an inspiration to those who follow in their footsteps.

(The committee's report contained brief obituary notes on the following deceased members.)

Aler, Charles C.
Archer, George A.
Becker, Charles A.
Curtis, Albert F.
Dilworth, John J.
Donahue, Frank J.
Ebrey, Cornelius E.
Drumond, I. W.
Gerstendorfer, Albert
Glidden, Francis K.
Goodrow, George T.
Harris, John E.
Henderson, George
Horgan, George V.
Hubbard, Luke
Johnson, Joseph E.
Kannair, Frank E.
King, Samuel G.
Matthews, James H.
Maxwell, Frank R.
Meiden, Erik V.
Mellor, Joseph C.
Moses, Fred L.
Murphy, Franklin, Jr.
Opper, Albert L.
O'Rourke, Thomas
Patek, George W.
Payson, Horace E.
Robinette, Roy B.
Robson, Herman
Schafer, Albert E.
Siliers, George
Shepherd, William T.
Stollberg, William F.
Sullivan, John R.
Thompson, Andrew
Toch, Henry M.
Uehlinger, Herman
Ursum, Irvin J.
Vizard, Anthony
Welter, John N.
Whalen, Mrs. Mary F.

Report on Paint Distributors

Last year this committee brought to your attention two problems of the distributors, which were working at that time, a hardship to them. We refer to that portion of the report calling attention to the fact that guarantees against decline on spring shipments did not cover sufficient period. This, as you know, has been remedied in the code, as has also the request that notice of at least six months be given covering discontinued shades and sizes.

We are looking forward with considerable interest to your trade-sales conference, because in it we hope to find some solution for the most difficult problem that has ever faced the paint jobbers, distributors, and wholesalers, to date. We refer to the sliding scale of discounts allowed to dealers on their yearly purchases. These additional discounts are taken from the distributors' gross profit, either in the entirety, or at best, distributor and manufacturer split the discount half and half. These additional discounts have materially reduced the profits and have made it almost impossible to produce a net profit on such accounts. The distributor is then forced to either of two reasonings:— namely, to give up the account, and turn it back to the manufacturer, or to continue to sell this particular customer at a net loss, hoping to make some profit from the various sundries that he might sell this customer.

We sincerely hope that a frank discussion, taking into consideration all of the facts of this problem, will take place at the coming convention, and that some steps will be taken to remedy this hardship.

Report on Simplification

Upon the appointment of the simplification committee a meeting was held and a program decided upon for the current year. In view of the broad scope of the simplification proogram and the necessity for further co-operation with it by all manufacturers, the committee deemed it their duty to devote the year toward furthering the universal adoption of the program.

Accordingly the program of information and propaganda was prepared and begun through the issuance of a letter to the Industry, including a copy of the simplification program in display form and also articles on the subject of selling oil colors in liquid measure which received wide publicity in trade journals, etc.

We also arranged for a change in the specifications as issued by the Federal Specification Board of the Federal government so that beginnig with the year 1934 all inquiries issued by the government for oil colors will be on a liquid measure.

With the passage of the national industrial recovery act the program was immediately halted and the entire simplification and standardization program is now incorporated in the code of fair competition for our industry which we hope will be signed by the President of the United States between the time of the preparation of this report and the annual meeting of the associations. This acceptance, however, should not be construed as completing the simplification and standardization program, because it is our sincere belief that further consideration should be given to other forms of simplification in our industry so that uniform and economical marketing of our products may be eventually secured.

Report on Tariff

There has been no meeting of the tariff committee during the year, but the secretary of the committee has advised the chairman and members regarding various matters that have been brought to his attention. The following is a brief summary of these:—

A bill was introduced in the last session of the house of representative to increase the tariff on flaxseed and oil obtained therefrom. Owing to pressure of other matters, this bill was not acted upon before adjournment of the Congress.

In H. R. 13991, the so-called "Domestic Allotment Bill" (one of the farm relief bills), an additional duty of 5 cents a pound was proposed on all imported oils and fats. Protests were lodged against this proposal. As in the case of the measure mentioned in the preceding paragraph, final action on the bill was not taken.

Since June 9, 1931, the Tariff Commission conducted an investigation of the tariff on flaxseed and linseed oil. November 25, 1932, the commission ordered that the flaxseed portion of the investigation be discontinued. A public hearing restricted entirely to linseed oil was held January 16, 1933. Representatives of our committee attended this hearing, in support of the crushers' advocacy for the maintenance of the protective and compensatory duties on linseed oil of 4.5 cents per pound, equivalent to a 65-percent-per-bushel duty on flaxseed, in order to encourage the maintenance of flax acreages in the Northwest and to protect domestic producers and crushers against foreign oil produced by cheap labor.

A communication was received in December, 1932, from a member of the association, suggesting that an import duty be put on perilla oil in order to safeguard the interests of the drying oil consuming industries. It was stated that imports of perilla oil had doubled since 1929, and that the oil was being mixed with soybean oil to produce a substitute for linseed oil in the manufacture of paints. A mail vote on this matter indicated a division of opinion among the members of the committee.

During the early Spring a hearing was held before the Tariff Commission on a proposal to place a tariff on synthetic iron oxides imported from Canada and made by a process which was alleged to infringe a United States patent. The tariff committee was represented at this hearing, but we did not take any part in the proceedings.

It has been proposed that our industry advocate increased tariffs on mixed paints to prevent the dumping of foreign products in this country. This is a matter which might be taken up when the new Congress convenes and the subject of tariffs is again under consideration.

Report on Trademarks

Several hundred letters, from members of the association and others, have been answered during the past year by your trademark bureau pertaining to the selection of new trademarks, and many others in response to other requests for advice or information. This shows how the bureau functions throughout the year in its several services to our members and the industry. It is interesting to note that such letters have steadily increased in number during recent years, and encouraging, because it shows that the industry as a whole has become more and more familiar with the bureau and its facilities, and more appreciative of its usefulness.

Many reports and registrations have been made by members of the association with the trademark bureau during the past year. When a report is recorded with the bureau it places on file at association headquarters the date of first use claimed by the owner, as well as copy of the label showing use of the mark. This is very desirable for our members as it may be of particular assistance in future years in determining the exact date of first use if the original records have been misplaced by the registrant.

The most important work carried on by the trademark bureau is averting the selection of marks by concerns in the industry which are the same or very similar to ones already in use. Therefore, your committee again urges that all manufacturers in the industry file at association headquarters, if they have not already done so, a list of their trademarks. Many times throughout the year instances of confliction arise which could have been avoided had they filed their marks with the trademark bureau, especially marks of recent adaption.

Each year a great many new names are added to the file records at association headquarters; at the present time the bureau's records contain approximately 24,000 trademarks used in the industry. Included in this record are all United States Patent Office registrations covering class 16 (paints and painters' materials). Therefore, it will be noted that the records are as complete as it is possible to make them.

Each year the trademark bureau notifies members of the association whose United States Patent Office registrations have expired, and call their attention to

March G. Bennett
Chairman on Trademarks

the necessity of re-registering same in order to retain their rights thereto.

The 1927 trademark book and 1929 and 1932 supplements still continues to be a popular reference guide for concerns in the industry. These published lists serve a very useful purpose in that they are of great assistance as a preliminary guide in adopting a new mark. These books include such information as name of trademark, concern using same, city and state, and product or products used on. Copies may be obtained from association headquarters at $3 per set.

In closing, your committee would like to call particular attention to the fact that the trademark bureau is essentially a service activity of your association and as such is ready and willing at all times to be of service to you in your individual trademark problems. It is to your advantage to avail yourselves of the services of the bureau not only to protect your own rights but to prevent innocent adoption of trademarks which are already used by others.

The committee again wishes to extend its thanks to Robert K. Shannon, manager of the trademark bureau, for his assistance and for his careful and efficient operation of the bureau.

Report on Traffic

On behalf of the traffic committee, a joint committee of both associations, this, our report for the year 1932-1933, is respectfully submitted.

The period hos been one of exceptional activity, and the development of greatest interest to our members is the reduction by the carriers of the rates on paints, varnishes, lacquers, and related articles, less carloads, from third to fourth class. For technical reasons, this was effected by publication of exceptions to the classication, instead of in the classication itself, and explains why the lower rates became available in the several subdivisions on different dates. The desirability of reporting the developments chronologically, as a matter of record, is apparent.

On November 20, 1932, Southeastern (Alabama, Florida, Georgia, Kentucky, Mississippi, Tennessee, the Carolinas, and Virginia) lines published fourth class rates on paints.

December 20, 1932, the description was broadened to include other finishes:—

Paints, noibn, or varnishes, noibn, including bronzing liquids, japan varnishes, lacquers and liquid shellacs.

December 28, Central Freight Association (Indiana, Ohio, Michigan, Western New York and Pennsylvania) lines joined the Southeastern lines in publishing fourth class rates on the finishes named in the preceding paragraph on traffic originating in their territory and destined to markets in the Southeastern States.

December 28, 1932, the Eastern Trunk Line Association (New York, Pennsylvania, Maryland and Delaware) joined the Southeastern lines in publishing the same basis of rates on traffic originating in the Eastern section, with the addition of asphaltum or coaltar paints to the description.

January 1, 1933, Western Trunk Lines (Illinois, Wisconsin, Minnesota, Ohio, Missouri, Kansas, Nebraska and the Dakotas) published fourth class rates on a broad description, subsequently used as a pattern by other associations in publishing local and joint through rates. This description is as follows:—

Paints, varnishes and lacquers, less-than-carloads, viz.:—

Paints, aluminum, bronze or gold, liquid, in bulk in barrels.

Paints, asphaltum or coaltar, in pails or metal cans in barrels or boxes, or in bulk in kits or pails.

Kalsomine (calcimine), paste, in bulk in pails.

Paints or varnishes, noibn in Western classification, including bronzing liquids, japan varnishes, lacquers and liquid shellacs, liquid or paste, in pails or metal cans in barrels or boxes, or in bulk in barrels, kits or pails.

Litharge, dry, in double bags.

Lithopone (see note), in bulk in cloth bags or paper bags, subject to the provisions of rule 40, section 10 (c) or Western classification.

Stains, furniture, mortar or wood, liquid, in pails or metal cans in barrels or boxes, or in bulk in barrels, kits or pails.

Wood fillers, liquid or paste, in metal cans or pails in barrels or boxes, or in bulk in barrels, or metal kits or pails.

Varnishes, asphaltum or coaltar, in pails or metal cans in barrels or boxes, or in bulk in kits or pails.

Note:—A small number of bags for reconditioning purposes in transit but not to exceed ten pounds in weight with any shipment may be loaded with shipments of and at the same rate applying on the lithopone which the bags accompany.

Effective January 1, 1933

January 1, 1933, the fourth class rating was published between stations in the State of Illinois on the description used by Western trunk lines.

January 11, 1933, fourth class rates were authorized on traffic originating in Illinois and destined to the Southeastern States, above described, on:—

Paints, noibn, varnishes, noibn, including bronzing liquids, japan varnishes, liquid shellac, asphaltum or coaltar paints.

January 20, 1933, the Southeastern lines, above described, added asphaltum and coaltar paints to the description for which

Willard E. Maston
Chairman on Membership

fourth class rates were authorized on business moving between stations in their territory.

February 1, 1933, Official classification lines published fourth class rates on Western trunk line description, set out in a preceding paragraph. Official classification territory embraces the States of Delaware, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont and to a limited extent Illinois, Kentucky, Wisconsin and West Virginia.

February 10, 1933, this basis was extended to include Illinois freight committee interstate territory—the Illinois freight committee has jurisdiction over traffic from Illinois to Southern Wisconsin, as well as rates between points in Illinois.

February 10, 1933, the Southwestern lines (Missouri, Arkansas, Oklahoma, Texas, Western Louisiana) published fourth class rates on the description used by Western trunk lines, already noted.

February 10, 1933, Western trunk lines and Southwestern lines published the same basis on traffic manufactured in the North and destined to the Southwestern States just named.

On the same date, publication was made for the Southeastern and Southwestern lines, jointly, on the same description.

March 1, 1933, official classification and Western trunk lines, jointly, published fourth class rates on business moving inter-territorially. As already noted, the rates were applicable on business moving within their respective territories, and now, for the first time, they join in authorizing this basis on business originating in the East and destined to the West,

thus broadening measurably the consuming territory, and the serviceability of the adjustment.

March 31, 1933, this was further extended to business originating in official classification and destined to Southwestern freight bureau territory, already described.

April 15, 1933, official classification lines added the following items to their tariff description:—

Auto top dressing or blacking, liquid; paint, lacquer or varnish increasing, reducing, removing, or thinning compounds, or paints, lacquer or varnish solvents.

April 20, 1933, Southern classification lines added calcimine; litharge, stains, furniture, mortar or wood; and wood fillers, to their tariff.

May 10, 1933, fourth class rates were authorized on traffic originating in Illinois and destined to Green Bay points in Wisconsin.

May 10, 1933, Illinois lines added lithopone, zinc oxide, and zinc sulphide to their tariff description, and

May 15, 1933, Illinois to Southeastern territory added calcimine, litharge, stains, wood fillers and asphaltum or coaltar varnishes to their tariff description, and

May 15, 1933, the Central Freight Association and Southeastern lines joined in broadening the description in their tariffs to include calcimine, litharge, stains, wood fillers and asphaltum or coaltar varnishes, and incidentally harmonize with the action taken by the other associations.

May 15, 1933, the Eastern trunk lines and Southeastern lines amended their joint tariff to include auto top dressing or blacking, linseed oil, paint oil compounds, turpentine, calcimine, litharge, stains, wood fillers, reducing and removing compounds, and paint, varnish or lacquer solvents.

May 15, 1933, official classification lines added zinc oxide, zinc sulphide, titanium dioxide and titanophone to their description.

May 17, 1933, Illinois to Southeastern territory added paint, lacquer or varnish increasing, reducing, removing or thinning compounds, paint, lacquer or varnish solvents, auto top dressing or blacking, linseed oil, paint oil compounds, and turpentine to the list of commodities for which fourth class rates are authorized.

May 17, 1933, central freight association to Southeastern territory, tariff description broadened to include paint, lacquer or varnish, increasing, reducing, removing or thinning compounds, or paint, lacquer or varnish solvents, auto top dressing, paint oil compounds, and turpentine.

June 1, 1933, official classification to Green Bay points in Wisconsin, rates between stations in this territory are separately published, and although the rates to other points in Western trunk line territory became available March 1, 1933, rates in this strip of territory on the west bank of Lake Michigan were not published until June 1, 1933, and the description embraced same additional items:—Auto top dressing or blacking, liquid; paint, lacquer or varnish increasing, Reducing, removing or thinning compounds, noibn, or paint, lacquer or varnish solvents noibn; paints, aluminum, bronze or gold, liquid; paints, asphaltum or coaltar; kalsomine, paste; paints or varnishes, noibn, including bronzing liquids, japan varnishes, lacquers and liquid shellacs, liquid or paste; litharge; lithopone; stains, furniture, mortar or wood, liquid; wood fillers, liquid or paste; varnishes, asphaltum or coaltar; zinc oxide, zinc sulphide, titanium dioxide or titanophone, and roofing cement.

June 15, 1933, the Southeastern lines added auto top dressing, linseed oil, paint oil compounds, paint, lacquer or varnish increasing, reducing, removing, or thinning compounds, and paint, varnish or lacquer solvents, and turpentine, to the list of items for which fourth class rates will be available.

June 15, 1933, corresponding basis was published from points in Western trunk line territory to stations in Montana.

July 1, 1933, official classification lines corrected their description on solvents so as to cover varieties in dry form and distributed in paper cartons.

July 1, 1933, Illinois freight committee added the following items to their tariff description:—Auto top dressing or blacking; paint, varnish or lacquer increasing, reducing, removing or thinning compounds, noibn, or paint, lacquer or varnish solvents, roofing cement, zinc oxide, zinc sulphide, titanium dioxide, and titanophone.

July 10, 1933, the Western trunk lines and Southwestern lines corrected their tariffs to include the items already referred to—specifically—Paint, lacquer or varnish increasing, reducing, removing or thinning compounds, noibn, or paint, lacquer or varnish solvents, noibn; auto top dressing or blacking, liquid; linseed oil, turpentine, and paint oil compounds.

July 10, 1933, the Southwestern lines published this same arrangement for their own territory, i. e., the same rates and tariff description on movements within their jurisdiction as applied on traffic originating in the North and destined to their territory.

July 10, 1933, the Southwestern and Southeastern lines jointly amended their tariff to take care of the additional items, above noted.

July 15, 1933, official classification lines added dry paints to their tariff description—paints heretofore referred to are described as liquid or paste.

August 1, 1933, tariff covering business from Illinois to Green Bay points in Wisconsin was amended to include:—Paint, lacquer or varnish increasing, reducing, removing or thinning compounds, noibn, or paint, lacquer or varnish solvents; auto top dressing or blacking; oil, linseed; turpentine.

August 1, 1933, Western trunk lines made a corresponding addition to their tariffs.

August 1, 1933, tariff description for traffic originating in official classification and destined to Western trunk line territory was amended to include additional items already noted.

E. A. Leveille
Chairman on Traffic

August 1, 1933, tariff naming the rates on traffic from Western trunk line to Montana points was amended to include auto top dressing, reducing and removing compounds and solvents, linseed oil, etc.

August 1, 1933, official classification lines for their own territory added zinc oxide, zinc sulphide, titanium dioxide or titanophone to their tariffs, thus adding to the dry paints already mentioned.

September 1, 1933, official classification lines added titanium dioxide, titanium oxide, and titanox, to their tariff description authorizing fourth class rates for less-carload movements between points in the Eastern section of continental United States.

It was the hope and expectation of your traffic committee and the traffic officers of the carriers that the lower rates would, by increasing the volume of rail traffic, reduce unit costs so as to justify the reduction in charges—it was an inducement to secure volume, and its substantially universal application reduced rates (a) where truck competition was encountered, (b) to a greater territory where competitive services were less regular and satisfactory, and (c) to an even greater territory where distribution is dependent upon rail facilities. To reduce revenues on such business was obviously a concession to the paint trade, which the carriers can afford to continue only if the desired volume is realized.

The third class rate is exactly 70 percent of first class in the relative scale so between two stations like St. Louis and Columbus, Ohio, where the first class rate is $1.01, or Cleveland and Baltimore, where the first class rate is $1.02, or between any other two stations of comparable distances in official classification territory (north of the Ohio and east of the Mississippi rivers), the third class rate is 71 cents, equivalent to $1.42 per ton, and the fourth class rate 51 cents, equivalent to $1.02—and the reduction from third to fourth class amounts to 40 cents per ton, or expressed in percentages—28 percent.

A simple mathematical computation will demonstrate that it requires an increase of 40 percent in tonnage at fourth class rates to produce the same revenues yielded at third class rates; i. e., 1,000 tons at $1.42 per ton (third class) amounts to $1,420—it requires 1,400 tons at $1.02 (fourth class) to produce the same amount.

And to compensate the carriers for the reduction, requires a very substantial increase in their volume of traffic which your committee hopes will be fully realized.

Competing agencies who had heretofore solicited the business largely on the basis of service were prompted to meet the situation, offering corresponding reduction in their charges, but some of the larger industries took the position that the railroads having initiated the rates deserve preference.

Charges for trucking services as well as those of the forwarding companies were only reduced to fourth class following the publication of that basis by the rail carriers, which is an excellent reason for believing that if the rail lines restored the third class rate, it will be a signal for their competitors to take similar action, and the cost of distributing our products will be advanced 40 percent. As expressed by the vice-president of one of the large rail lines:—

"Under the circumstances you will not think it amiss if we suggest your industry view the situation as a whole and permit us to participate in business to points to which our rates may temporarily be out of line with those of our unregulated competitors."

The tariffs first published carried an expiration date of June 30, 1933, voluntarily extended to December 31, 1933, and it is understood will be further extended to March 31, 1934—and if the expected increase in the volume of tonnage is realized, that basis may be continued indefinitely. In the final analysis, the industry itself will determine by its patronage if it wants the adjustment continued.

Trade Sales Conference

(Continued from page 27)

It seems to me that the concerns that must resort to questionable merchandising methods rather than selling their goods on a merit basis could properly devote their energies to making their goods more salable. After all, isn't it rather a hollow success to know that expanding sales have been built on unfair tactics? Do we relish any athletic contest where one of the contestants takes some advantage over his competitors, even though such advantage may be ethically correct? Business, to be enjoyed, must be considered as a game to be played fair and square.

For those who have no time for sports, I can offer no better policy than that of following the Golden Rule.

Clean Up and Paint Up

In the absence of Dr. R. A. Plumb, chairman of the clean-up and paint-up committee, who had given a paper on the subject at an earlier session of the conventions, Ralph W. Emerson, director of the bureau, prepared a brief statement, which was not read owing to the lateness of the hour. The statement follows:

Mr. Emerson's Statement

I believe that the c'ean-up and paint-up campaign in its broad aspects is familiar to the principals of paint and varnish manufacturing concerns, but that in a great many instances the same degree of acquaintanceship does not extend throughout their sales and advertising organizations, and especially that it does not extend to the rank and file of dealers.

As an instance of this, John R. MacGregor, who was instrumental in building up the splendid model clean-up and paint-up campaign here in Chicago, has told me that while the newspapers were promoting c'ean-up and paint-up, parades were in progress and mass meetings were being held, there were hardware dealers who were so oblivous to their opportunity that, instead of putting paint into their windows, they left in ice skates and other merchandise which was practically unsalable at the time. Students of the high schools, boys and girls, donned aprons and overalls and visited such stores, washed the windows, took out the unsuitable merchandise and put in pyramids of paint cans, displays of brushes and other clean-up and paint-up goods. It seems almost incredible that dealers could be so lacking in their opportunity, yet it is so.

The most effective way to reach them is for the salesmen of the paint companies to carry on a program of missionary work, explain the clean-up and paint-up campaign opportunity to the dealers, and equip them with the Business Getting Manuals, which can be obtained from the clean-up and paint-up campaign bureau in Washington. We have direct, unsolicted letters, telling us how the use of this manual increased sales of the individuals who used it.

For a paint or hardwaredealer to fail to recognize the profit of the clean-up and paint-up campaign is a good deal like a dealer in toys putting up his shutters during the week before Christmas, while his competitors are putting emblems of Santa Claus in the windows.

One great error of many paint dealers is that they think the campaign is not for them, because it is usually handled entirely by civic interests outside of the paint industry. Of course, that is its great strength, for no one can conceive of thousands of people parading the streets and spending days of their time just to help the paint dealers make money exclusively. It isn't human nature.

If the clean-up and paint-up campaign has not been started in a community by the civic forces, the way to get it started is for a live, progressive paint man to call upon a group of men, mostly in other lines of business, who are influential in the affairs of the city, and suggest a clean-up and paint-up campaign, but organized with the cooperation of the mayor and the city authorities, not with talk about selling paint—but on the broadest possible lines of generally benefitting the city and making it a better place to live in by cleaning up yards and vacant lots and rehabilitating property. The broader the interests which are brought into the campaign, and the more care that is taken in avoiding special stress upon paint in getting it started, the more successful the campaign will be. If the start is made by just talking paint, the feeling that an effort is being made to make the public the cat's paw of a special interest may be created and the entire opportunity ruined by such apparent selfishness.

Suggestions for procedure will be sent free to any member of the industry who wishes to contact men in other lines of business and the civic authorities in any city where a clean-up and paint-up campaign is not already being organized. Such inquiries are more than welcome and will be given painstaking and very earnest attention.

The clean-up and paint-up campaign brings profit to the industry, even in the absence of cooperation from the industry. But with cooperation from the industry it brings far greater profits than would otherwise be possible. A reading of the 1933 clean-up and paint-up report will reflect the mighty opportunity for making clean up and paint up a major factor in business recovery in the paint and varnish industry in 1934.

Ernest T. Trigg

President, National Paint, Varnish and Lacquer Association

(Continued from page 5)

sales manager May 1, 1910; vice-president, March which the educational bureau was to grow. In 1927, he became chairman of the educational bureau, which in 1930, as a result of the reorganization plan proposed by him, became in effect the joint central board of the industry, under which scientific, promotive, and institutional work was fostered. Mr. Trigg's recent work as chairman of the code committee for the industry is nationally known as a rare achievement.

Born in Aurora, Ill., August 12, 1877, Mr. Trigg got an office boy's job with E. H. Haines, Chicago paint material firm, in 1892, and three years later went with Heath & Milligan, paint manufacturers. He became general sales manager for this company in 1902, and in 1908 joined John Lucas & Co., an old-established paint concern in Philadelphia. Following incorporation of the firm in 1912 he became vice-president and general manager and in 1922 was elected president.

Mr. Trigg's career of achievement is attributable to tremendous mental and physical vitality, both of which qualities were demanded by the incessant code drafting work of the last few months and by his diversification of activities in the last two decades. Always a driving force within his own commercial organization, Mr. Trigg found time not only for paint trade association work but for work with chambers of commerce, civic groups, Federal wartime boards, banks, railroads, fraternal societies, and charitable institutions. A list of his affiliations constitutes a slice of Philadelphia life. He is an Episcopalian, a Republican and a Mason.

Mr. Trigg and Miss Alice Gibbons were married in 1901. They have two children, Mrs. Charles J. Swain, jr., and Ernest T. Trigg, jr.

Francis C. Atwood

President, Federation of Paint and Varnish Production Clubs

(Continued from page 5)

and technician as vital factors in the welfare of the paint, varnish, and lacquer industry. In his present position, he and his associates in the federated group will find an additional task under the new industry set-up.

Mr. Atwood was born May 7, 1893, in Salem, Mass., and, after studying at Danvers High School, was graduated from the Massachusetts Institute of Technology. Later he was an instructor at the institute for a short time. After his academic career, Mr. Atwood was first connected with the Exolon Company, manufacturer of electric furnace products, and then for eight years was with Kalmus, Comstock & Westcott, Inc., research engineers. Also, for two years he was a member of Bonnar-Atwood, Inc., and he joined the Craftex Company in 1927. This company is now affiliated with the Atlantic Gypsum Products Company.

Mr. Atwood has been president of the New England Paint and Varnish Club, chairman of the plant managers' committee of the manufacturers' association and active in program work for the federation. He is a member of the American Electrochemical Society, American Chemical Society, Chemists Club (New York), University Club (Boston), Society of Rheology, Acoustical Society of America, the Albemarle Golf Club, and the American Association for the Advancement of Science.

In 1918, Mr. Atwood and Miss Eleanor Brooks Bonnar were married. They have two daughters, Bonnie and Betsey, and live in Newton, Mass.

Charles J. Roh

Treasurer, National Paint, Varnish and Lacquer Association

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remaining for two years. He was made general 29, 1920, and president, January 1, 1926. Mr. Roh is also president of the Wilson-Imperial Company, and the Emalco Investment Company, Newark.

Born June 2, 1879, the son of Robert and Anna Maier Roh, "Charlie" Roh always has lived in or near Newark, with the exception of the two years in Boston. He still is "going to the school of experience" and despite his activity in association affairs, he finds time to be interested in the Newark Chamber of Commerce and in golf. He is a member of the Essex Club, Newark; Crestmont Golf, West Orange; Athletic Club and Downtown Club, Newark. He is a member of St. Luke's Episcopal Church and of the Montclair lodge, F. & A. Masons.

September 9, 1903, Mr. Roh married Miss Jessie D. Rose; they have two children, Miss Helen Roh and Charles E. Roh. They live at 192 Christopher street, Montclair, N. J.

26 YEARS OF CONTINUOUS PAINT AND VARNISH RESEARCH

View of one of the physical testing laboratories in the Scientific Section headquarters in Washington. In the various laboratories of the Scientific Section, fundamental and practical research is conducted.

The Scientific Section of the American Paint and Varnish Manufacturers' Association has been conducting research work on paints, varnishes, lacquers, colors, pigments, oils and similar raw materials since 1907. In that time there have been published over 600 technical articles which have outlined the results of their investigations into many different subjects of interest to the industry. Many books on the testing of paints and paint materials have also been published by the director of the laboratories, Henry A. Gardner.

There have been developed in the laboratories of the Scientific Section many different types of apparatus that are now widely employed in the laboratories of the industry throughout America for the physical testing of paint, varnish, and lacquer products. Standardized apparatus for this purpose has greatly simplified the task of the chemist. Such apparatus includes Accelerated Weathering Apparatus — Tensile Strength and Elongation Apparatus — Apparatus for Consistency Tests on Varnishes — Viscosity Standards — Color Standards for Varnishes — Mobilometers — Flowmeters — Film Preparation Devices — Color Change Cabinets — Hardness and Abrasion Resistance Apparatus — Devices for Measuring Hiding Power — Gloss Meters — Evaporation Balances — etc.

The Scientific Section's Laboratories are located at

2201 New York Ave., N.W., Washington, D. C.

Headquarters of the National Paint, Varnish and Lacquer Association

PROCEEDINGS OF THE

American Paint and Varnish Manufacturers' Association

SEVENTH ANNUAL MEETING

Chicago, Ill., October 30 and 31, 1933

Monday, October 30

First Session, Monday Forenoon

(The seventh annual meeting of the American Paint and Varnish Manufacturers' Association was called to order in the Edgewater Beach Hotel, Chicago, Monday, October 30, 1933, at 9:50 a. m., James F. Kurfees, president of the association, presiding.)

President Kurfees: I will ask you to come to order, gentlemen.

The American Paint and Varnish Manufacturers' Association is now in session. This is an open meeting for members and non-members of the industry. Let that be distinctly understood. All are welcome. Possibly we are not all brothers in that great fraternity, the "Mystic Knights of the Sea," but the chances are we will be brothers or cousins in the NRA. So, this is an open meeting.

I will ask Dr. Plumb to pleace occupy the chair while the president reads his report.

(Dr. R. A. Plub assumed the chair).

Chairman Plumb: Members of the convention, we will now have the pleasure and profit of listening to the address of our esteemed president, Mr. Kurfees.

Address of the President

President Kurfees:—To the members of the American Paint and Varnish Manufacturers' Association:—Our by-laws provide that it shall be the duty of the president of the association to present at the annual meeting a report upon the affairs of the association, together with such matters and recommendations as he may deem of interest. In compliance with this provision, I submit the following:—

As we approach the end of this, our fiscal year, it will doubtless be recalled in some respects at least as one of the most memorable years in the history of the industry. It will not be remembered so much as a year of great volume of business, but a year in which the industry has come face to face with the enactment of laws entirely new to us in this country. In order to prepare for and to meet the conditions placed upon industry by the enactment of the National Industrial Recovery Act providing for codes of fair competition in industry, the associations of our industry appointed a general code committee consisting of eight members, who accepted the task of drafting a code upon which the paint, varnish and lacquer industry might operate in harmony with the aims and purposes of the national industrial recovery act.

This was indeed a great responsibility calling for an immense amount of time and labor on the part of this committee. However, be it said to the credit of this committee, it has labored earnestly day after day in an effort to bring its work to a successful conclusion, and while it is impossible to realize the many difficulties incident to its labor, we are nevertheless somewhat familiar with the accomplishments thus far and I feel that we owe this committee a debt of gratitude.

Entire Industry Heard

It was of course necessary in the adoption of a code that it be representative of the entire industry and to accomplish this, the committee invited every concern in the industry to submit suggestions, and by means of regional meetings the entire industry was accorded an opportunity of passing on its findings before the code was filed with the National Recovery Administration, which was done on September 26 and with whom, at the time of preparing this report, it awaits final approval.

In the past much has been said and written on the subject of cost accounting, selling prices, and price cutting. These discussions have largely centered around the question of costs, with the thought that if, when and where we know the cost, the selling price will automatically take care of itself and all will be well. Now, on the surface that does appear reasonable, but while knowing the cost is essential, are we, even when we know the cost, sufficiently guided by it when making sales? One might properly ask this question:—Do we always know our selling price?

I mention this because it is thought by some to be one of our evils that might be remedied.

The question of amalgamation of our two associations has been under consideration for some years, and it is thought by many of our members that in order to cope with problems arising in connection with the administration of the National Recovery Act, it is not only advisable but necessary that we now get together in one united organization, to the end that we could better serve both ourselves and the public. With this in view, the amalgamation committee has for months been striving to work out a plan for uniting in one organization every individual manufacturer in the paint, varnish and lacquer industry.

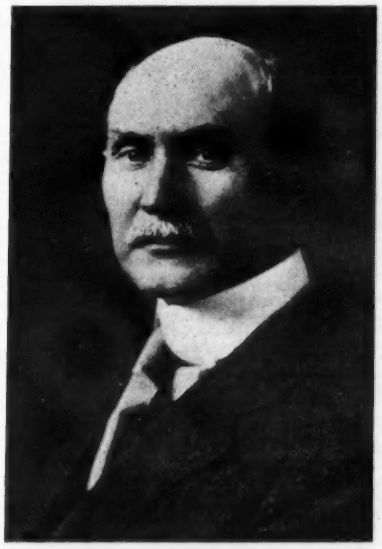
The report, as finally prepared by this committee, will be presented during this meeting, and it is hoped that it will receive your earnest consideration and be unanimously approved and adopted by the industry.

Our regular committees, appointed to gather and submit data on the numerous phases of our industry, have been quite active through the year, and the reports they have prepared are well worthy of our consideration. Sometimes we overlook the fact that the personnel of these committees make considerable sacrifice in accepting appointment. In many instances, it simply means consuming a lot of their valuable time in their efforts to serve us—all of us.

Valuable Committee Work

The clean up and paint up and the save the surface campaign committees have been busy as usual in their efforts to clean up, paint up and to have more surfaces saved with our products.

Our traffic committee, another live wire committee, has been and is ever alert and



James F. Kurfees
The Presiding Officer

on the job to see that we receive proper rates and service at the hands of transportation.

Our membership committee, under the guiding hand of its chairman, our "Uncle George" Heckel, has been unusually active and has doubtless brought to us more new members this year than in any previous year in the history of our association.

Other committees have served us equally well and to all we owe a debt of gratitude for their co-operation and good work.

I have no special recommendations with which to burden you, but I join in the hope of all that insofar as business conditions are concerned, we have passed the worst and that the future holds brighter prospects for industry in general.

During the year we were made sad by the hand of death removing from our midst a number of our members and officials, proper announcement of which will be made at this meeting.

On behalf of the association, I wish to thank the trade press for the good service it continues to render. To the officers and association headquarters' staff, I express my sincere appreciation and thanks for their splendid co-operation and service. Certainly no president ever had, nor could one ask or expect, more loyal co-operation than has been given me during the year by the Washington office, and I am sure the brand of co-operation is in store for my successor.

Chairman Plumb: This excellent report of our president was received with favor and appreciation by the board of directors of our association. What is the pleasure of this meeting? Is there a motion for approval?

(Upon motion regularly made and seconded, it was voted to accept the report of the president.)

Chairman Plumb: I return the chair to you, President Kurfees.

(President Kurfees assumed the chair.)

President Kurfees: The next order of business will be the report of our treasurer, Mr. Roh.

Treasurer's Report

Charles J. Roh: I have before me the audited report of the association's income and expenditures made by Ernst & Ernst.

I know you, with me, will be pleased to know that our outgo during the year was $2,213.71 under our receipts. As was anticipated at the beginning of the year, and reported to you last year, our income for the year has fallen just about fifteen percent. In other words, our membership income up to September 30, 1933, for the year, was $27,150, and last year, the income was $33,587.50. We received interest this year amounting to, on securities, $836.60, and savings account interest amounting to $232.06, and other items of income amounting to $74, making our total income $28,294.66.

There was allocated on the approval of the board of directors $26,000 to the educational bureau, which, with other minor items of expense amounting to $80.95, making our total expenses $26,080.95, leaving a balance of $2,213.71, which has been transferred to surplus.

Probably of greater interest to the association membership is the account of expenditures and receipts of the educational bureau, which, as you know, operates all of the association activities and has charge of all expenditures in connection with our association work.

You will also be glad to know that our income from all sources against expenditures has enabled us to add during the year, $25,026.05 to surplus.

During the year we received from investors subscriptions $87,630. Just to emphasize that, this is very nearly four times as much income from investors in the educational bureau fund as there was received from dues, about three and one-half times. Last year we received $123,630, but the decrease is occasioned, as you know, because of the sliding scale of subscriptions to the educational bureau, which is based on sales. Just naturally in 1932 the sales were under those of 1931, which lessened the subscriptions just about 25 to 30 percent.

We received from the American association, as I have already reported, $26,000 to this fund, and from the National Paint, Oil and Varnish Association $20,000, and from other sources $641.38, making the total expenses $134,271.38, against 1933 total receipts of $177,729.02. As the prospect of the income was reduced, the budget and finance committee was instructed by the educational bureau to reduce the operating expenses. And so the operating expenses of the administration and general expense of the educational bureau in 1933 was $36,980.68 against an expenditure of $51,677.45 for the preceding year.

Building maintenance—this year $5,050.52, last year $4,677.64; scientific section—this year $29,924.87, last year $41,149.40; clean up and paint up—this year $8,433.28, last year $14,014.44; unfair competition bureau—this year $14,307.84, last year $25,237.89; traffic bureau—$2,545.12 against $3,138.54 for the preceding year; save the surface campaign—$12,003.02 against $16, 344.57. Total expenditures of $109,245.33 against $156.029.93.

I might say that we have a surplus account in the educational bureau amounting to $83,044.13, which is made up of cash, accounts receivables, investments and inventories. I might also add that the administration this year has an added direct expense—and I don't think we ever have been able to figure the indirect expense because of the amount of time that has been given to it—in the administration of code matters, of $5,174.11. Of course, you know that does not take into account all of the personal expenditures of all the members and of the leadership in drawing up that code. This is just the office expense.

I also have the audit of Ernst & Ernst on the educational bureau account and will be very glad to answer any questions, if anyone cares to ask them.

I have another matter to present. During the last four months it has been necessary to take actions that are slightly contrary to the instructions of the constitution and by-laws of the American association. These actions were taken only after conference with the officers, the heads of committees and the treasurer. To cover those actions I should like to present a resolution, Mr. President:—That the action of the board of directors in the matter of waiving initiation fees—that was done, of course, to bring people into membership as quickly as possible to take part of the responsibility of the code—revising the dues in the lower brackets (in other words, to permit small manufacturers to enter at a nominal fee), the admission of new members during August and September without dues for the year just closing, be hereby ratified and approved.

President Kurfees: You have heard the report of the treasurer. Mr. Treasurer, would you like to have a vote on your report, including the resolution, or would you like to have a separate vote on that?

Treasurer Roh: I am not particular about the vote on the treasurer's report, but I would like to have a vote on the resolution.

Ernest T. Trigg: I would like to move that we accept and file the report of the treasurer and that we adopt the resolution ratifying the action of the officers, as presented by Mr. Roh.

President Kurfees: Did we have a second to Mr. Trigg's motion?

(The motion was seconded, put to a vote and carried.)

President Kurfees: The next order of business is a report from the plant managers' committee, by Mr. Atwood, the chairman of that committee, who is now, I am happy to say, the president of that very important organization. Mr. Atwood.

F. C. Atwood: I won't presume on your good nature to read in its entirety the report I have written concerning the activities of the Federation of Paint and Varnish Production Club, and of course the plant managers' report is essentially a report to you gentlemen of the activities of that organization. I do believe that you will be interested in learning about their activities and you can get that by reading the report.

The federation, as most of you know, has continued to grow and expand in its activities. The last meeting, which closed on Saturday, was the best and largest we have ever had, with something very close to 300 registrations, and I believe those of you who were there can bear with me when I say that most of those, or a great many of those, registered attended nearly every session and in most cases took quite an active part in the activities.

(Mr. Atwood gave a summary of the committee's report, this, in its entirety, being as follows.)

Report on Plant Managers

Your plant manager's committee again finds it a privilege and pleasure, as well as a duty, to inform you as to the activities of the Federation of Paint and Varnish Production Clubs for another year just ending. This committee, as such, no longer attempts to promote and carry out technical investigations. Your own scientific section on the one hand and the technical committees of the federation on the other hand are handling such matters satisfactorily. Rather, your committee is attempting to act in an advisory capacity on matters of common interest to both our associations in conformity with our by-laws. This report is presented with that same aim in view.

The federation as a whole enjoyed another active, prosperous, and beneficial year. Beginning with the convention at Washington last year, our registered attendance reached a high mark which approximately reached the combined registered attendance at the meetings of both your own association and the National Paint, Oil and Varnish Association. The keen interest in the technical papers of the various clubs was largely responsible for this. In no small measure, however, the desire to study and inspect the exhibits in the First Paint Industries Show was also a factor in the attendance.

The interest and participation of federation members in their separate clubs has continued to increase. Many groups have reported large and active meetings throughout the year. It has been your committee's endeavor to have each club increase the scope of their programs well beyond the ordinary discussion of technical subjects. There has been ample evidence throughout the year that many clubs are serving the industry well in many unusual ways. The New York club made a serious study and offered resolutions concerning the danger to the industry of the indiscriminate distribution of paint and varnish formulae by raw material dealers. The Golden Gate club offered similar resolutions with particular reference to certain practices of synthetic resin manufacturers. The Cleveland club pointed out the need for correlating information about synthetic resins so that the varnish manufacturer might make more accurate comparisons of their value. The New England club completed publication of their book on paint and varnish manufacture, which book has been accepted as of real value to salesmen and executives as well as to technical men. In addition, the New England club again assisted in the monster paint meeting sponsored by the paint and oil club at which there was an attendance of over one thousand dealers, salesmen and others. Other clubs have had executive nights

at which the production men entertained the other branches of the industry. All of these activities help consolidate all our efforts to promote the welfare of the paint industry.

This broadened scope of activity on the part of the federation has called attention to their membership requirements. We believe it to be for the best interests of the manufacturers' association as well as of the federation to carefully restrict membership to actual production or technical men. These are active members. In addition, other classes known as temporary, contributing honorary, and honorary have been created. The present membership enrollment has shown a slight increase the past year in spite of the serious business conditions. While the number of members from some of the larger companies has decreased, yet more companies than ever are represented. Several times more paint companies have representation in the federation when compared with similar membership in the manufacturers' association.

Federation Self-Supporting

The federation at Washington, for the first time in its existence, faced the year without financial support from the American Paint and Varnish Manufacturers' Association. In addition, many of their expenses were increased directly by your own restricted finances. It is pleasant to report that the federation has been able to successfully balance its ordinary budget without curtailing any activity. On the contrary, the "Official Digest" has been continued as a means of publishing technical data of unique value to the paint industry and has broadened its scope by being made available to subscribing members. The federation, in addition, has a separate budget which cares for all expenses and income incident to the paint show. This budget is considered as strictly educational in its scope and so far has no part in the ordinary mechanism of the federation.

The Paint Industries Show has proven of unusual value as a means of bringing before the federation membership new developments in raw materials and equipment. It is of particular value to the smaller manufacturer who cannot easily contact all the federation membership through the year but can do so through the show and the resultant reports of the exhibits carried back to the clubs by attending members. To the larger raw material manufacturer, it gives an opportunity to fire a broadside appeal to the entire federation at one time which may be followed up by contacts with constituent clubs at a later date. This year's show was a sell-out nearly two months before the convention, indicating the wisdom and need for such an activity. We believe your association also is measurably benefited by this show. Your sympathetic interest and encouragement of its continued success can well be classed as enlightened self-interest.

The Paint Industries Show has helped the federation depart from its single minded study of technical papers at its convention sessions. It offered something the benefit of which the production superintendent could enjoy as well as the technical man. This idea has been expanded and the federation convention now covers three days instead of two. This extra day's session was devoted to a spontaneous, round table discussion of the problems confronting the plant manager —management problems which have not before been included or discussed in the regular club technical papers. It is but natural that this year's discussion included the highly important subject of NRA problems.

It is on record that within a day after the NIRA was signed an appeal went to the federation membership to co-operate to their utmost in this recovery program. By the first of July we were on record in General Johnson's office pledging our co-operation with his efforts so far as it lay in our power to do so. We indicated that our co-operation in this matter would normally be through the manufacturers' association. In view of this serious offer on our part and because of the very wide contact the federation has, through its present membership, it seems unfortunate that no recognition has yet been given the federation by representation on the enlarged code committee or in any other similar way.

The federation is not a trade organization of the type asked to submit codes. Neither is it a labor organization which might be concerned with safeguards and provisions for their rights. Its membership includes men who are the top sergeants, the lieutenants and, in many cases, the captains of the unit companies of the paint industry. They, therefore, are in most cases responsible for the carrying out of those parts of the code of the industry having to do with labor. We have it on good authority that "the administration is concerned first with basic codes on minimum wage scales and maximum working hours. After these are adopted further requirements can be incorporated at a later date."

Satisfactory co-operation with labor is of utmost importance in the critical months ahead. The federation members by their close association with and control of the details of labor problems stand ready to keep clear the Paint Industry's record on this score.

Operating Savings

The average federation member, when he begins to wonder about his own position in the "New Deal," is more likely to find himself in the ranks of the "Forgotten Man" of the present. He has taken his cuts in salary without grumbling. He has worked hard to cut costs, to save waste, to keep quality up, to juggle production to meet the sales department's many demands and at the same time keep abreast of the extraordinary changes going on in paint and varnish formulation due to an avalanche of new raw materials. He asks only that his job and his return for it be kept in mind in the days ahead.

Of more serious concern to the production man is the thought that certain raw material suppliers in their zeal to get business may be offering information or services which will jeopardize the production man's job. The manufacturer cannot afford to be without the services of competent technical and production men. Any single raw material supplier is concerned only with promoting the sale of his own goods. Judicial study and final acceptance of any formulae or even of services should remain with the staff of the individual paint and varnish manufacturer. We believe the federation will ever and with increasing vigor be on the alert to protect the individual and collective rights of its membership.

If, as seems likely, a single comprehensive trade organization is deemed necessary to meet the needs of the NIRA, it would appear that the federation can function with increasing effectiveness. First, it can continue to care for the needs and rights of its members as individual technical men. Further, if your manufacturers' organization loses its identity, the federation whose interests as manufacturers coincide with yours, stands ready, able and willing to serve our community of interests.

Whatever may be your desires as to the future of our plant managers committee, we welcome the opportunity to promote with you the best interests of our industry.

President Kurfees: You have heard the report of Mr. Atwood, representing the plant managers' committee. What is your pleasure?

(It was regularly moved, seconded and carried that the report be accepted.)

Tribute to Production Men

Mr. Trigg: Mr. President, may I say just a word? I don't think we ought to let this report go through without an expression of appreciation from the manufacturers and the manufacturers' association as a group to the men who have worked so diligently in creating this production club or organization, and who have brought it up to a point where they are performing a very real service to the industry as a whole, the value of which I think perhaps has not been fully appreciated up to the present time by the manufacturers, but which I believe, as Mr. Atwood has pointed out to us, should be more fully utilized in the future by closer co-operation with that organization. And I would like, if I may, to offer a resolution of appreciation to the production clubs for the work they have done and the interest they have taken, and with it an expression of desire and a wish to co-operate more closely with them in the future as it may be possible for us to do from time to time. I make that motion.

(The motion was regularly seconded and carried.)

President Kurfees: The next order of business is the report of the educational bureau of the paint and varnish industry, Mr. Trigg, chairman.

Educational Bureau

Mr. Trigg:—The report of the chairman will be very brief. The real work of the educational bureau, as you know, is carried on by certain departments or divisions of it, and the men who are responsible for those activities, and who have made them successful will report for themselves.

I do, however, while I have the opportunity, want to say to you that the educational bureau has carried on through the year in its usual effective and unselfish manner. The educational bureau has had four regular meetings and two special meetings during the year. That means calling together men from all sections of the country who are represented on the educational bureau. The high standard of attendance at our meetings has been maintained through the year. The educational bureau has a record of 98 percent attendance through the year, based upon the total number on the bureau.

Under the reorganization plan, if approved by you and by the National Paint, Oil and Varnish Association in its session this afternoon, the educational bureau as such, as an independent or distinct unit, will cease to exist. So that subject to the favorable action on the reorganization plan, this will be the last report from the educational bureau itself.

Traces Bureau's History

Perhaps you might like to go back with me over the life of the educational bureau, very briefly. It started in 1905, almost thirty years ago now, as a committee known as the advertising committee, of which Ludington Patton was then the chairman. A year, or perhaps two years later, because of the development in that committee of the scope of its work, and a realization that it should devote its time and effort to the promotion of the interests of the industry in all sorts of ways, the name was changed by your authority to the bureau of promotion and development, and that name continued for, I think, three years. I do not have the exact dates, but they are on record, when the name was changed to the educational bureau, and it has continued as such ever since.

It has been the privilege of the chairman to serve on that bureau for a number of years. I want to take this opportunity of paying a tribute to the men who have served through those years on the educational bureau for their devotion to the best interests of the industry as a whole without regard to selfish ambitions or desires, all of which have been laid on one side, when we have come together as an educational bureau to consider the welfare of the whole industry.

Distinguished Men Served

There has been represented on the educational bureau and the organizations which preceded it, to which I have just referred under other names, a very large list of representative men in this industry. It would be interesting, and I am going to suggest to Mr. Heckel, if he will, at his convenience, to bring down to date a history of the educational bureau, particularly setting forth the names of the men who have served on it during this almost thirty-year period.

I don't believe it would be possible for an industry to have a committee or a division of it which served its interests more faithfully than has the educational bureau. During this period of time, a tradition of service of the highest type has been built up for the educational bureau, and I am very confident all of you join with me in the hope and in the assurance that whatever organization is set up in the future to carry on the same type of work as the educational bureau has been doing, will benefit by the experiences and the basis of action which have been developed through these years by the educational bureau, and which has carried us forward to even greater heights of success and of influence and of usefulness to the public as a whole.

I am now going to call on Dr. Gardner, who is in charge of the scientific section of the educational bureau, to report to you on that. Dr. Gardner.

Scientific Section

Dr. H. A. Gardner: Before presenting my report, I would like to have the pleasure of introducing Dr. William Krumbhaar, of Berlin, who is visiting this country, and who has come over here to present a lecture before the Federation Clubs.

Dr. Krumbhaar Introduced

Dr. William Krumbhaar: I am really very glad to be with you. I addressed the federation clubs some days ago and told them a little about common sense in the paint and varnish industry; and it was my feeling that the men enjoyed my talk very much. For my part, I enjoyed the reading of the technical papers during the sessions, and it was my impression that all these technical papers were of a very high standard.

Another interesting thing to me was the federation paint show, with all the exhibits. I was especially interested in the work of your scientific section.

I will stay in this country for at least several months. I hope to meet many of you personally. Thank you very much.

Dr. Gardner's Report

Dr. Gardner: At the risk of tiring some of the older members of the association, I am going to present a very brief resume for the benefit of the newer members of some of the outstanding results that have come through the work of the educational bureau and the scientific section during the past twenty-five years.

As you know, twenty-five years ago, when we started, in 1907, there were only six paint chemists in the United States and only about three laboratories, whereas today we have over six hundred paint chemists, most of whom are in the Federation, and practically every plant in the United States has a well equipped laboratory, some of them spending up to as high as half a million dollars a year on research.

The laboratory originally started in Philadelphia in 1907; we moved to Washington in 1910. We later built a building at our present headquarters, wholly for laboratory purposes, but since it has been enlarged and is now the Gregg Memorial Institute, which houses all the activities of the organization.

The work on flax that was performed in the early days is worthy of a brief picture to the newer members, because in 1918, when there were only seven million bushels of flax grown in this country as against the normal production of thirty million bushels, the educational bureau promptly jumped in and started a campaign that has saved the flax growing area of this country. It is probable that if this work had not been carried out by the educational bureau and its flax committee, that we would not have any linseed oil in America today. That remark has been passed to me, and I think it is quite possible.

We must keep up our oil crops of all kinds in this country, and we must encourage the production of oil crops of all types abroad, because, after all, it is very difficult for the chemist to compete with nature. We can attempt to make synthetic resins and other synthetics for our industry, but I doubt very much if we will ever be able to compete with natural processes in the making of those products which we must have for our industry.

The Laboratory

The work in our laboratory, as you know, is very largely of a fundamental character. The chemists in your own plants are held down to a great many routine problems which they must carry on from day to day. They have but very little time for carrying out fundamental research work, and the main purpose of the laboratory of the scientific section is to carry out that type of work and give the results to your laboratories so that your own chemists can utilize those results and make them of practical value. We will make suggestions to them, and they will take those suggestions and follow them up and see if they can apply them to their own practical plant problems.

Another feature of some possible interest to you is the work on tung oil, which is being carried out, and which started in 1924, when tung oil went from fifty cents a gallon to over four dollars a gallon. The threatened shortage made it necessary that our bureau jump in and take steps to encourage its introduction in this country. You all know the story of how we introduced it into Florida, first, and then into Mississippi and Alabama. Up to the present time, there are over 25,000 acres planted, and that is only a drop in the bucket to what we need. What we have done, to supplement that, is to stimulate planting in foreign countries. We now have plantings in thirty-nine different countries. We hope some day in the future there will be a world-wide production of tung oil. That is another product that we must have and that cannot be replaced by synthetics.

There are a great many other oil crops we are looking into, the chief among which are the planting of chia and perilla and safflower. We believe that these will supplement the amount of linseed oil that we are now receiving.

Periodical Publications

As you know, one of the services of the scientific section is to send out monthly, in fact, twice a month, the reports of its work in the form of scientific section circulars. These go to every member of the association. During the past year, we have published something like twenty circulars, and I am going over these circulars very briefly, to indicate the type of work that was done during the year.

The first one is on the subject of "Tung Oil Growing in Florida," which I have referred to. Incidentally, there has been quite a remarkable development in many of these groves. After a great many years of work, we felt that trees were immune to disease. About two years ago, there suddenly popped up a disease which threatened to wipe out the entire industry. It was known as chlorossis. The leaves of the tree would gradually brown and drop off and the bark would turn white, and it would throw out new budwood, and in a brief time the trees would be in a condition where they would not thrive further. During the past two wears, we found that the addition of a small amount of zinc sulphate to the soil actually overcomes the condition, and the trees are brought back to their normal condition. As a result, the tung oil planters all over the South are very much delighted. They are going ahead with much larger acreage than ever before.

Another was on the subject of "Color Systems." We have correlated all the color systems that are now available for use in the measurement of color of varnishes and lacquers. We have published a chart indicating how the results of one system can be termed in those of another system.

We published a circular on "Paint Guarantees," pointing out the fallacy of paint guarantees. Over seventy thousand copies of that circular were distributed during the past year.

Another circular we published was entitled "Skins in Paint," and there were over eighty thousand copies of this circular distributed throughout the United States to painters, dealers and jobbers, salesmen, home owners, and to others who are interested in the subject of paint purchases. While we were able to overcome to a great extent a lot of this cheap paint competition, I am frank to say that those who made this paint which contained up to 30 percent of water immediately dropped the use of the water and they are now using 30 percent of kerosene, or rather, benzin.

Paint Defects Described

Another type of circular we published was called "Construction Defects," and in this circular we pointed out the various types of paint defects which occur throughout the country. We indicated how these defects could be prevented and overcome. Thousands of copies of this circular have been distributed to your dealers and salesmen, so that they can answer your complaints. Instead of having these complaints come into your home office, if they can be answered by your own salesmen it will probably be a highly advantageous thing to do. It will also save you in a great many cases the making good or restitution on certain jobs the faults of which were not due to the paint but due to moisture conditions. The type of defects referred to are chalking, alligatoring, gas discoloration, copper stains, mildew, peeling and blistering, and other defects of that type.

In this connection, there was brought up at the Federation meeting last week the subject of the peeling of paint from redwood. It seems there is quite a lot of peeling of paint at the present time from redwood surfaces. We all know that redwood is probably the best wood there is in America to paint with satisfactory results, if it is kept dry, but apparently it is seldom dry; and it is an investigation which we expect to undertake during the year along with the federation and other groups interested.

In this connection, it was pointed out at that meeting that we must look forward during the coming two years to a great amount of paint flaking and peeling, more than we have ever had before, because of the fact that humidity systems are going into small homes, or they will go into small homes, and when humidity systems throw large quantities of moisture against the solid side of a home, the moisture will precipitate and try to work itself through the siding under the paint, and we will have more blistering troubles than ever before.

Greater Problem Ahead

So there is a greater problem ahead of us in this matter than we have started out with, and it is going to require not only the work of all laboratories, but a lot of educational work among the builders and the architects as well, in order to design wooden homes that will hold paint, because if we don't do that, the home owner will use brick, he will use cement, or tile, or anything else except wood, and there will be a very marked diminution in the amount of paint used on the outside of buildings.

It is one of the most important things, I think, for us to look into, because it threatens our industry from the standpoint of exterior paint circulation.

We published a circular on "Synthetic Resin Index," in which we listed over two hundred different synthetic resins, and pointed out all their physical properties.

We published a circular on "Lacquer Liquids." We listed one hundred and fifty different solvents and thinners for lacquers, and pointed out their physical properties.

These circulars range in size from four pages up to 100 pages.

There was one on the subject of "Water in Paint," giving a simple qualitative test for the detection of water.

There was a circular on the method of determining the texture of your paint; is it smooth or is it rough. We give you a very simple device for measuring the smoothness or texture of your paint product.

Another one on "Hiding Power of Paint," a new type of apparatus to determine how many square feet per gallon your paint will hide.

Another was on the subjeect of "Lithographic Bulb Viscometer," a new type of instrument we have developed for determining the viscosity of ink oils.

Another was on the subject of "Impact Adhesion of Coatings"; do they resist adhesion when applied to automobile fenders. You ought to have some method of determining that in your laboratory before you send them out. We have indicated by a very simple type of apparatus how this may be done.

In fact, one of the main jobs of the scientific section is to develop new types of physical apparatus, not chemical but physical, with which you can test all of your products, and which will give you a system of correlations so that everybody in the industry will be talking the same language. You have had our body standards and our color standards. It is our desire to put out and have ready for your industry apparatus that will determine every possible physical property that you want to look into, including color. Color is a long way off, but we want to talk upon that during the coming year.

We published a circular on "Clear Coatings for Metal Signs." That indicates the type of clear lacquer to use over metal signs.

Another one was published on "Rubberset Oil." The rubberset oil that came to us lately has been examined, like other samples, during the past twenty years. In fact, we have received over one hundred oils and resins from different parts of the world during our existence, and we have reported quite fully on those products, so that you would be kept up-to-date as to the properties and possibilities of all new incoming products that might be available to our industry.

Other Pamphlets Issued

Another circular on "Adhesion Studies for Plasticized Lacquers."

Another one on "Luminous Pigments." Luminous pigments may be introduced to a much wider degree during the coming years for advertising purposes and we have indicated certain types of liquids which could be used in those paints.

Another on the subect of "Plasticizer Absorption by Pigments," showing the amount of plasticizer for lacquer purposes which each will absorb.

Another on the subject of "Mildew," showing the results of an investigation in Florida. I might say that we now have in our laboratory over two thousand panels which we exposed in Florida. Those two thousand panels are being studied in the laboratory and will be at least a month before we finish that work before we can report to you more finally on the subject of mildew. Unless we get a permanent cure for it, we are going to have a much greater falling off in sales volume. I have seen jobs painted in April, which is the worst time for mildew to start, and by June the houses are perfectly black. The home owner says:—"What is the use of painting the house if it gets black. I might as well put off the painting and leave the house as it is. If I paint it white, inside of a few months it turns black. What is the use of spending all that money."

So, mildew is a very important problem. We hope not only to present this final report before the end of the year, or by the first of the year, but to keep these tests going during the coming year, because we have run into some new difficulties and into some new thoughts, the results of which may be quite vital.

Another circular was on the subject of "Tautness of Airplane Fabrics," giving methods of determining accurately the tautness of an airplane wing surface through the use of these different instruments which have been developed.

Another was on the subject of "Pigment and Color Index for 1933," which was a book listing twelve hundred different colors produced in America, upon which we have given the specific gravity and the bulking value and the absorption and the fineness and the chemical composition. That work will enable the federation, the plant manager rather, to use this information in cost accounting. You will be able to get the bulking value of any known formula through the use of this work and this book.

Publishing of Abstracts

One of the important parts of the scientific section's work is the publishing of abstracts. Every three months we publish an abstract bulletin of about two hundred pages. In there we present over one thousand abstracts of foreign articles, and of the patents which have appeared in this country and abroad.

If we get all the magazines on paint or varnish or lacquer that are published in the world; if we read those magazines and abstract the results of what they are doing abroad, as well as what they are doing in this country; then if we go to the patent offices of the world, or, at least, in the important countries, and get a record of every patent issued that relates to our industry, then if we present it in a summary like this every month, we are putting you and your production men in closer touch with what is going on not only in this country but in the world in the protective coating industry.

That is not often enough, every three months. We ought to do it every month. We hope during the coming year to start this similar service, that will be very much more complete, and it will come out at least every month. In that way, you will have a true picture of everything that is going on throughout the world in the protective coating industry insofar as patents or technical articles are concerned.

Another piece of work carried on during the past year was the publishing of this laboratory manual, the sixth edition of our book on the "Physical and Chemical Properties of Paints and Varnishes." We have listed in there, and described completely, every known method of chemical examination and every known method of physical examination of paints, varnishes, lacquers and colors. The book is over 1,500 pages; it weighs seven pounds, and has seven hundred thousand words, if that is of interest.

So you see, we are trying to keep up-to-date in this scientific section with all the modern developments which we can transmit to the members.

There are some new developments which we would like to touch upon later developments that we would like to get into our scientific section work, to make it more important, to make it more serviceable to you. But I think probably it would be better to wait a little bit until we can get them more fully developed before saying anything about them. Thank you, very much.

Unfair Competition

Mr. Trigg: There is one other report I would like to call for, that of the unfair competition committee. If Mr. Dabney is here, I would like to call on him.

Report on Unfair Competition

Your unfair competition committee wishes to again stress to the membership that the committee does not participate in the pending work of the Unfair Competition Bureau.

The Unfair Competition Bureau was established in 1917 and represents an outstanding attempt at self-discipline. It operates under the general supervision of the unfair competition committee, but the bureau studiously maintains the traditional relationship of confidence between

W. C. Dabney
Chairman of Unfair Competition

attorneys and clients. Its files are never open to inspection and the reports which the bureau makes to your committee about its specific activities are only made after public release of such information as the Federal Trade Commission publishes.

The function of the unfair competition committee is to aid and advise the Unfair Competition Bureau in matters of personnel, budget and finance, and to direct the general policy in accordance with which the bureau conducits its work. At a meeting of this committee on February 14, 1933, a statement of policy was framed and agreed upon in answer to a request from the educational bureau for a clarification of unfair competition policy regarding publicity. This statement of policy was presented on February 15, 1933, to the educational bureau and approved by that body. The message from the committee to the educational bureau read as follows:—

Bureau Policy

The manager of the Unfair Competition Bureau read that part of the minutes of the educational bureau meeting of November 14, 1932, which dealt with Unfair Competition Bureau policy.

On motion by Mr. Patton, seconded by Mr. Zinti, it was resolved that the bureau should give no publicity to Federal Trade Commission complaints and that the bureau should give as wide publicity as possible to final orders of the Federal Trade Commission. Motion carried.

On motion, duly made and seconded, it was resolved that the following statement of bureau policy should be approved and transmitted to the Educational Bureau:—

14 February, 1933,
Rooseveit Hotel,
New York.

Educational Bureau,
Paint and Varnish Industry.
Gentlemen:—

At your meeting in Washington on November 14, 1932, you referred back to the unfair competition committee the matter of general policy and, more particularly, a policy in reference to publicity, which should determine the activities of the Unfair Competition Bureau.

At a regular meeting on this date the Unfair Competition Committee carefully reviewed this matter and gave its approval to this—

Statement of Policy
For the
Unfair Competition Bureau

The following statement which has appeared regularly in the year books of our association has given constant notice of the intention of those who created the Unfair Competition Bureau, to wit:—

"Its duty is to co-operate with the Federal Trade Commission and other national and state agencies in the suppression of all forms of unfair competition, especially bribery or graft, mislabeling and misrepresentation."

Furthermore, every member of our association has signed the anti-bribery agreement which includes a pledge of co-operation with the government. This pledge was renewed by all who participated in our trade practice conference.

These incidents, we believe, furnish a guide to the general policy under which the Unfair Competition Bureau should function.

More specifically we believe that co-operation with government agencies requires that the Unfair Competition Bureau continue to offer its aid to officials charged with the enforcement of law. In so doing our bureau must obviously assure itself that there is evidence in each particular case within the jurisdiction of certain government officials. This does not constitute the bureau as an arbiter over our industry since the decision to proceed with a case and its outcome are left to official bodies.

The policy which your committee has approved in regard to publicity by the Unfair Competition Bureau on Matters before the Federal Trade Commission is indicated by the following motions which were passed at our meeting:—

(1) That the Unfair Competition Bureau should give no publicity on complaints that may be issued by the Federal Trade Commission even though those complaints are public documents.

(2) That when matters affecting our industry reach a final determination before the Federal Trade Commission, as by the release of a cease and desist order by the Commission, the Unfair Competition Bureau should give as wide publicity as possible to that result and the official documents which announce it.

Respectfully submitted.
Unfair Competition Committee, William C. Dabney, Chairman.

Legal Service

Legal service from the Unfair Competition Bureau is constantly available to and daily resorted to by the association officers and executives. This important function is sometimes lost sight of by those who think of merely the case work of this bureau. In the conduct of a trade association with so many varied activities as ours, legal questions are constantly arising, which require professional advice to guide those who are charged with operating our association work. In addition to furnishing legal memoranda on tax questions, etc., the staff of the Unfair Competition Bureau has, during the past year, spent considerable time in the preparation and submission of briefs on behalf of the association, on such questions as government competition in business, the Black 30-hour bill, etc.

Obviously, it is necessary for the Unfair Competition Bureau to confine its legal service to problems affecting the association membership at large and to specific requests from officers and executives of the association. The staff of our bureau, obviously, cannot replace private counsel of individual association members.

The code for our industry, filed under the National Recovery Administration, contains many provisions regarding unfair methods of competition. Many of these provisions are familiar to our association and our members are fortunate in having had long experience and some special facilities for dealing with these problems. It would seem, therefore, that the facilities of the Unfair Competition Bureau will be of even greater importance in the future to our industry.

Personnel:—Until Mr. McFadden's recent appointment as general manager of our association activities, Mr. McFadden and M. Q. Macdonald have constituted the personnel of the Unfair Competition Bureau. Mr. McFadden is a member of the bar of the District of Columbia and of the United States Supreme Court. He was formerly a member of the board of review of the Federal Trade Commission. Mr. McFadden is a member of the New York bar and was formerly special assistant to the Attorney-General. I feel very sure that in his new capacity of general manager he can still be of invaluable help to the Unfair Competition Bureau.

In addition to this report of your committee, a special report will be filed by the Unfair Competition Bureau giving some detailed information in regard to its work during the past year.

Discussion by Mr. McFadden

General Manager McFadden: Before discussing the work of the unfair competition bureau, I want to step into my other role as general manager and talk about the registration fee. I don't want to make a plea that these be paid, but just to make a few brief statements to show you that we expect those who attend our sessions to pay this nominal fee to help share the heavy expenses involved.

All association work, including conventions, is run carefully on a budget; and with a very efficient Chicago committee, expenses have been cut to a minimum, but there is a large bill to be paid for the running of this convention, and we have estimated the number to be in attendance and budgeted accordingly.

We want the convention to stand on its own feet, because our association activities are heavy, various and expensive. You have already been told by the treasurer that the special, direct expenses of the code amounted to over five thousand dollars, and the indirect expenses of the association by reason of the work of the staff, at least five thousand dollars. All of this money, and more, has been and will be spent in the interest of the industry. That is why we call your attention to the formality of registering and paying a nominal registration fee.

Unfair Competition Details

In regard to the unfair competition bureau report, there are printed copies here in the room for distribution, and because you have very important matters ahead of you and a very limited time, I am not going to read that report or refer to it in detail. However, there is one case that I want to make mention of, not by the way of giving undue emphasis to any case, but so that there will be no omissions. I refer to the Cook Paint & Varnish Company, a corporation, and Mark L. Jones, individually, which was ironed out by the Federal Trade Commission, and with which you are familiar. The only reason I mention that is because of the dissenting opinion of Mr. Humphrey, one of the commissioners. The dissenting opinion nearly always attracts wider attention than the majority opinion, and the majority opinion is based on the finding of facts, which is so long that it is very rarely published.

I, of course, recognize the right of a commissioner to dissent, but I feel it a matter of fairness to Mr. Macdonald, who is our loyal co-operator in this bureau work, to point out to you that Mr. Humphrey stated that the "witness Macdonald is discredited." I want first to explain why he was a witness. We do not present evidence ourselves in these cases, but assist the government's bodies by bringing to them such evidence as is brought to us and found to be reliable. In this particular case testimony was introduced in the hearings regarding certain conduct of Mr. Macdonald. He was subpenaed then to give his version of his own conduct. That explains why he appeared and the type of testimony.

I think it is perfectly obvious to anyone who reads the findings of facts and the decision by the four members of the commission that Mr. Humphrey in his dissenting opinion is the one who is discredited.

There are other cases here given in detail, which I ask you to read carefully.

Thanks Dr. Gardner

I do want to take an opportunity to thank Dr. Gardner and his scientific section for the fine co-operation it has rendered to the whole association staff, and particularly to the unfair competition bureau. As you know, whenever questions of mislabeling or misbranding arise, we have to have the product in question analyzed to see what the facts are, and we have very prompt, effective service from the scientific section in matters of that kind. Dr. Gardner also is of very frequent assistance to us in legislative capacities, attending hearings with us and advising us as to the technical facts regarding our industry, so that we can present your case.

Speaking of co-operation, I will just call your attention to the fact that during the trade sales conference to be held later, one of the speakers will be Harry Van Horn, who is president of the National Association of Better Business Bureaus. We work very closely with them, and I am sure you will be glad to get better acquainted with the better business bureaus.

Now I think I should say a word about the future of unfair competition, apart from the bureau, or the committee, or the association. Very soon we will be operating under a code under the authority of the NIRA and, as you know, that law states that when a document of this sort is signed by the President it becomes the code of unfair competition for the industry. Now the first significance of that is that we have been given an opportunity as an industry to write our own law, to decide what we think are unfair methods of competition. So that this code is not imposed on the industry, but it is written by the industry, and for that reason I am confident that it means something and that it will be effective.

The next comment and final comment to make in regard to the future under the NIRA is to remind you that as soon as the code becomes effective it automatically is binding on all members of the industry without any further act on their part; therefore, a violation of any of those provisions is a violation of law. We will have more discussion about that on Tuesday, but I thought it fitting to mention the changing aspect of unfair competition.

Mr. Dabney:—Thank you, Mr. McFadden. Is Mr. Macdonald in the room?

General Manager McFadden.—I should have told you that I found Mr. Macdonald very busy helping out on convention arrangements, and because of pressure of time we agreed between each other that I would tell the whole story.

Report of Unfair Competition Bureau

The Unfair Competition Bureau submits herewith its annual report for the year ending November 1, 1933. In most of the matters mentioned herein our bureau has cooperated with the authorities in accordance with the purpose for which this bureau was established. A number of cases pending are not reported, as official action has not been taken, and still other matters are pending in the bureau itself for further study.

Functions of the Bureau

The bureau was organized in 1918 for the purpose of aiding in the suppression of commercial bribery, false advertising, misbranding and other unfair trade practices. In matters of general policy it is under the direction of the unfair competition committee. Matters of finance are controlled by the budget and finance committee, a subcommittee of the Educational Bureau of the Paint and Varnish Industry.

In addition to its duties in connection with unfair competition, the bureau renders general legal service for the associations to assist in the proper guidance of association work.

It cooperates with and receives the cooperation of members and non-members of our associations, the better business bureaus, and other organizations. Since its organization, the bureau has maintained its traditional relations of confidence with respect to complaints and like matters brought to its attention.

Only after independent inquiries does the bureau take appropriate action in matters referred to it. When our bureau feels that there is a serious question as to whether a law has been violated, it refers the matter to the appropriate authority, who in turn reviews all facts

to determine jurisdiction before proceeding. This procedure tends to eliminate the chance of error in conclusions either of fact or of law.

During the past year the bureau has responded to many requests for information or advice on a great variety of matters involving the application of State and Federal laws and regulations affecting the industry. This has enabled many members to adjust their practice and avoid any cause for complaint and unnecessary friction with enforcement officials.

The bureau has not neglected opportunities to establish cooperative relations with other industries and gratefully acknowledges assistance rendered by them in matters requiring the cooperation and good will of their members.

Although the assistance rendered by various better business bureaus in one matter of considerable importance is elsewhere mentioned, it is appropriate to acknowledge their cooperation in many other matters of equal importance to our industry.

Legislation

Without infringing upon the report of the legislative committee, it seems proper to state that the bureau has repeatedly been called on to appear in legislative matters.

This bureau prepared and presented the data and argument in the special committee of the house, investigating the extent of government competition with private business. It is understood that the chairman intends to introduce several measures to carry out the recommendations of the committee, including the following:—"The manufacture of paints and varnishes at the Norfolk, San Francisco, Philadelphia, Charleston, and other navy yards should be discontinued."

The bureau staff also appeared on behalf of the industry before the Senate Committee on Labor when the Black 30-Hour Bill was under consideration, and before the Senate Committee on Agriculture and Forestry in opposition to a proposal which would have taken tung oil off the free list.

The bureau likewise cooperated with the chairman of the legislative committee in the preparation of data used in successful opposition to proposed legislation which would have seriously hampered spray painting in the District of Columbia. In North Carolina, legislation regulating the use of paint sprays was defeated through the cooperation of the bureau with the industrial users in that State.

Certain objections to the draft of the standard mechanics' lien act were made by the bureau, and were taken care of in the final report of the committee of the American Bar Association having that matter in charge.

Lead and Zinc

In view of numerous inquiries concerning the proper method of labeling combination leads and zincs, it seems appropriate to reprint a resolution unanimously adopted at the annual meeting of the association in 1913.

"Combination" Leads and Zincs

At the annual meeting of the association, held at Chicago in 1913, the following resolution offered by the educational bureau, with the approval of the board of directors, was unanimously adopted:

"Resolved: That this association strongly deprecates any form of mislabeling.

"Resolved: That the terms, 'Lead' or 'White Lead,' will be used by its members exclusively to designate the pure basic carbonate or basic sulphate of lead, or the two in combination; the term, 'Zinc,' 'Zinc Oxide, 'Oxide of Zinc,' 'Zinc White,' only to designate pure zinc oxide; and the term, 'Linseed Oil,' only to designate pure linseed oil.

"Resolved also: That the members of this association will print upon their labels the net weight or measure of the contents of the package.

"Explanation: The terms defining zinc oxide are to be used only on oxides containing 99 percent or more of pure zinc oxide. Where a zinc oxide is reduced by the addition of inert reinforcing pigments, if the term, 'zinc,' 'zinc white,' etc., be used, it shall be followed by the word 'compound' in type of the same size'

In reiterating these resolutions thirteen years ago, the secretary of our associations set out specific rules with comments as follows:—

"Recognition has frequently been given by government authorities to the paint manufacturing industry as exceptional, in that it has consistently endeavored to reform, of itself, such practices as are shown to be unfair or evil. This is a reputation worth maintaining.

"It is therefore respectfully suggested that, if you have not already done so you take prompt measures to revise your 'lead' and 'zinc' schedules to conform to the following:

"1. 'White Lead' on labels or in advertising means only the basic carbonate or the basic sulphate of lead. If reduced or 'reinforced' at all, the terms should be modified or followed by the word 'Compound' in letters as conspicuous as the main title. If the lead content be less than 50 percent of the whole, the word 'lead' should not be used at all on the label, except as a part of the complete formula printed thereon.

"2. The same rule applies in colors in oil, etc.

"3. 'Zinc,' 'Zinc Oxide,' 'Zinc White,' 'White Zinc,' etc., mean only plain, unreduced zinc oxide, including, perhaps, those grades containing under 5 percent of lead sulphate, since these are permitted in existing State laws. (Note: A preferable practice, even with these, would be to follow strictly the rule laid down by the association, labeling them 'leaded Zinc Oxide.') If zincs having a higher lead content are used, the title should be followed or preceded by the word 'Leaded.' If in any way reduced or compounded, the title should be followed conspicuously by the word, 'Compound,' and if less than 50 percent of zinc is used, the term 'zinc' should not appear.

"Compounds of zinc or of lead with other pigments exceeding 50 percent are properly designated as 'Whites.'

"4. 'French Zinc,' 'French White Zinc,' 'French Process Zinc,' 'White Seal,' 'Green Seal,' 'Red Seal,' etc., all designate zinc oxide made by the French process, and are not permissible on the label of any oxide made by the American process. 'Vieille Montagne' or 'V. M.' is permissible only on the products of that company, which have never been obtainable by the rank and file of American manufacturers.

"The rule as to the use of the term, 'Compound,' etc., applies here precisely as with white lead."

As mentioned elsewhere, the trade standards have been recognized by the Federal Trade Commission and further established by decrees of the circuit court of appeals.

Cases

In accordance with the policy for the Unfair Competition Bureau established by the unfair competition committee with the approval of the educational bureau, names of cases are mentioned when there are public documents, except in the case of complaints issued in pending matters by the Federal Trade Commission.

United States Court Cases

(1) The Circuit Court of Appeals for the Sixth Circuit announced as a principle of law, a theory that has long been upheld by our industry in its dealings with the public—that is to say—

"If consumers or dealers prefer to purchase a given article because it was made by a particular manufacturer or class of manufacturers, they have a right to do so, and this right cannot be satisfied by imposing upon them an exactly similar article, or one equally as good, but having a different origin." Brown Fence & Wire Co. v. Federal Trade Commission. 64 Fed. (2d) 934, 936—(May 9, 1933).

This case involved the sale of paint, among other things, and the use of the typical "Direct-from-Factory" and "Factory-to-You" advertising of articles purchased from others.

(2) The Circuit Court of Appeals for the Second Circuit has issued a rule to show cause why a manufacturer should not be adjudged in contempt for alleged violation of an order of the Court directing the abandonment of the term, "White Lead," in describing a product containing less than 50 percent white lead, and the term, "Zinc Lead," when the product is not wholly composed of zinc and lead. This decree of the court affirmed an order of the Federal Trade Commission which adopted the lead labeling rules established by this industry in 1913. (Federal Trade Commission v. Hoboken White Lead and Color Works, No. 11284—Oct. Term 1930.)

Regardless of the decision on the rule to show cause, the decree, embodying the established trade custom, will stand unimpaired.

This is the second time that the industry's lead rules have been established by a decree of the Federal court.

Federal Trade Commission Matters

Part of the activities of the Federal Trade Commission involving products of this industry are mentioned in connection with the action of the United States Circuit Court of Appeals. In addition, the commission has announced its findings as to the facts and order in the Matter of Cook Paint & Varnish Company, a corporation, and Mark L. Jones, individually. The respondents are ordered to cease and desist from—

"Secretly giving or offering to give sums of money to employees of customers or prospective customers of Cook Paint & Varnish Company, or those of its competitors' customers or prospective customers, without the knowledge or consent of their employers, as inducements to influence said employees to purchase the products of respondent Cook Paint & Varnish Company, or to recommend such purchases to said employers, or to recommend to said employers the use of respondent Cook Paint & Varnish Company's products, or as promised gratuities for having induced such purchases by such employers, or for having recommended the use of respondent Cook Paint & Varnish Company's products to such employers or to influence such employers to refrain from dealing or contracting to deal with competitors of respondent, or to influence such employers to continue to deal with respondent Cook Paint & Varnish Company."

This order to cease and desist was filed by the commission on September 23, 1933, and released as a public document on October 2, 1933. William E. Humphrey, one of the five commissioners, filed a dissenting opinion. (Federal Trade Commission Docket No. 1959.) The bureau is advised that this order will be appealed to the circuit court of appeals.

The results of the bureau's investigation of other cases have been referred to the commission for appropriate action. Some of these pending cases have proceeded to the issuance of formal complaints. As it is now the policy of the bureau, under the direction of the unfair competition committee, to give no publicity to such pending matters until final determination has been made by the commission, further comment will be deferred.

Stipulations

In the interest of economy of administration and speedy disposition of cases, the Federal Trade Commission procedure provides for the closing of certain classes of cases in the discretion of the commission, by a stipulation as to the facts and agreement to abandon the practice under consideration. In such cases, where the interest of the public does not demand it, the names are not disclosed by the commission. The following stipulations have been accepted since the last report of the bureau:

Rubber Paint—No. 938. A corporation manufacturing paint, etc., agreed to stop using the word, "Rubber," so as to imply that its products are composed wholly or in substantial part of rubber when such is not the fact.

Lead and Zinc—Nos. 975 and 1027. A manufacturer of paint abandoned the use of the words "Lead & Zinc" in such manner as to tend to lead purchasers to believe that the product is made of lead and zinc in equal proportions. Another firm agreed to stop using the description, "Zinc-Lead Combination," unless the product contains lead and zinc each in substantial quantities.

Manufacturing—Nos. 1001 and 1002. Two corporations engaged in the sale of paints and varnishes agreed to stop using the word "manufacturing" as part of their corporate names, or in advertising so long as they do not own, operate, or control, a factory.

Buy Direct—No. 1049. An individual selling paint agreed to stop using the line "Buy your paint direct and save Middlemen's Profit" so long as he does not manufacture such paint.

State Matters

Mislabeled paint at attractive prices, usually around a dollar a gallon, found a ready market during the past year. Pending the investigation of charges of misbranding in interstate commerce filed by the bureau with the Federal Trade Commission, the bureau sought and obtained the co-operation of better business bureaus in three States.

The proprietor of a so-called "Factory Paint Store" at Columbus, Ohio, was arrested on May 4, 1933, on the complaint of the manager of the local better business bureau and charged in the municipal court with a violation of the Ohio advertising statute.

Paint sold at this store had been examined and the vehicle was found to contain 47.90 percent of water. Other paint from the same manufacturer had been examined and the vehicle was found to contain 56.73 percent of water. When such facts were presented to the newspapers, they refused advertising copy. A sign was then placed in the store window, telling the public that newspapers had refused copy and inviting them to listen to the store's radio program over the local station. The results of the examination of the paint by the State authorities were presented to the radio station, which cancelled the broadcasting contract. Resort was then had to house-to-house dodgers, and one newspaper inadvertently accepted an advertisement setting out a formula inaccurately stating the pigment content and failing to disclose the presence of 29.18 percent of water in the vehicle.

The prosecution, based on this advertisement, resulted in a plea of guilty on July 6. The defendant agreed to discontinue business by the end of the month and was placed on probation. Judge Rose, in disposing of the case, stated that he would not entertain a motion for probation if he believed the defendant had any knowledge that the paint had been adulterated. "In this instance," he said, "the real culprit is the manufacturer who labeled the paint. To deceive the public as to the kind of paint they buy is the worst kind of fraud." The probation officer kept the matter under careful observation, and the store was closed as agreed upon.

Samples of such paint sold in various cities have been examined and the vehicle has been found to contain from 47 percent to 66 percent of water. So-called "white lead" has been examined and found to contain no lead.

In combating this form of competition the bureau prepared a short "Primer on the Purchase of Paint," which was sent to the various better business bureaus, together with scientific section circular No. 427 on "Skins in Paint" supplied through the courtesy of Director H. A. Gardner. The purpose of the memorandum was to furnish a composite reply to numerous requests from such bureaus for information that might assist them in the handling of paint problems. The bureaus responded by issuing special bulletins and a series of radio talks during the painting season. Where such action was warranted, they placed the facts before the newspapers which cooperated by excluding objectionable paint advertising.

These bureaus, while vigorous in their cooperation, were careful to guard the interests of legitimate business. A typical warning concludes with the statement that "paint and its uses are subjects for experts and the only safe rule we know for the general public to follow is to purchase these products from a dealer who represents a reliable manufacturer and then have them applied by a skillful and trustworthy painter."

In this movement to protect the trade and the public from such paint, the laboratory of the scientific section has contributed generously of its services, and the local clubs of the National Paint, Oil and Varnish Association, and the National Association of Paint Distributors have cooperated whenever opportunity offered.

In addition, the bureau has had the helpful cooperation of numerous individuals, agencies and organizations. Such cooperation in one case resulted in the check-up by a large department store of its line of paints, and the dropping of brands that did not comply with the law.

The temptation to ignore recognized trade standards has apparently been very great during the past year, resulting in a larger number of such matters than usual. Several are in the course of investigation.

Complaints from New Distributors

As a result of difficult business conditions many distributors have been tempted to take on lines with which they were totally unfamiliar. This inexperience, and the lack of proper care in the examination of written contracts before signature, has resulted in widespread complaints from firms in a great variety of businesses that were induced to attempt the distribution of a line of plastic wall coatings. In most cases they had no experience whatever in distributing such material and were, therefore, less able to give proper weight to oral statements concerning markets, prices, values and general prospects.

The prospective dealers have been invited to the home office of the manufacturer where they have signed contracts and trade acceptances. They soon learned that they were in a highly competitive field, and found that many oral representations made by the salesmen were not in the written contracts. While admitting that the company scrupulously observed the terms of the written contracts, they all state that the contracts do not correspond with the preliminary oral representations of the salesmen. One of the principal grounds of complaint has been oral preliminary offers of specified exclusive territory, wider than that assigned by the written contracts; and, in some cases, the discovery that a stock of the material is still on sale in the community, in the hands of distributors whose contracts had expired. The trade acceptances given at the time such contracts are signed are promptly negotiated and considerable litigation has resulted. Without in any way attempting to excuse sales methods such as those complained of, there is no escape from the conclusion that these difficulties could, in most cases, have been avoided by the observance of the ordinary prudence called for in executing contracts involving such large obligations. The matter is receiving careful consideration by our bureau in cooperation with the better business bureaus.

Codes of Fair Competition

From the beginning, this industry has presented an example in the field of cooperation and self-government. It has attempted, with remarkable success, to correct objectionable practices, in some instances relying wholly on voluntary cooperation and the force of opinion within the trade itself.

It has seen its trade rules on misbranding of lead and zinc and shellac recognized and adopted by the Federal Trade Commission, and crystallized into law in decrees of the Federal courts.

Instead of resisting laws of this kind, it has sought the cooperation of state and Federal enforcement agencies, and while seeking cooperation, it has also given a degree of cooperation that has made it conspicuous in the field of trade association activities.

In an effort to make this voluntary cooperation more effective, the industry has in some cases sponsored and in others suppported both state and Federal legislation. It supported misbranding and bribery legislation in four states. In cooperation with other trade associations it participated in litigation in the supreme court that resulted in the placing of a new milestone in the law of unfair competition.

The new legislation permitting industries to establish and enforce their own codes of fair competition has furnished an opportunity for self-government beyond the dreams of those who, forty years ago, set up their first non-exchange agreement, and twenty years ago grappled for the first time with misbranding.

Unlike some laws that attempt to impose rules of conduct without the consent and against the wishes of those affected, the new law for the industry was framed by the members of the industry, and covers those things that have been the subject of discussion whenever opportunity offered. Rules on misbranding, false advertising, bribery, stabilization of sizes and shades, exchange of goods, discounts and datings, guarantees, consignments, free deals and competitive relations have been dealt with, first by voluntary agreement, in accordance with the traditions of the industry, for submission in connection with the code. The outstanding point of difference is that the industry has not only set up its own rules of conduct, but has been provided with means of enforcement never heretofore available in one law.

Violation of the code is a misdemeanor punishable by a fine of $500.00 for each offense and each day of violation is a separate offense. Violations may also be prevented by injunctions of the Federal courts.

Finally, every violation of these standards of conduct set up by the industry itself is declared to be an unfair method of competition with in the meaning of the Federal Trade Commission act.

Those industries that have always looked to the government for relief, without doing their part in self-government, in policing, or in co-operative effort will doubtless be disappointed in the operation of the new law. We are confident that our industry, which represents a different school of thought, and has had the courage to grapple with problems without the aid of any legislation, and to cooperate in making legislation effective, will accept its new responsibilities and reap a proportionate reward.

Mr. Trigg: That completes the report of the educational bureau.

President Kurfees:—You have heard this very interesting report of the educational bureau. What is your pleasure? Are there any remarks on this splendid report from the educational bureau?

S. A. Bennett:—I move it be accepted and placed on file.

(The motion was seconded and carried).

Save the Surface

President Kurfees:—The next order of business will be the report of the save the surface campaign, C. W. Eastwood, chairman.

Mr. Eastwood's Address

C. W. Eastwood: The save the surface report this year has been printed in an unusual form. To make it possible for you to get the complete story rapidly and graphically, the activities of the campaign have been told in picture form. Every member of the industry will, I am sure, be intensely interested in reading it. You will find it on page 59 of the committee report booklet. Because of the thorough way in which the printed report tells the story, I will merely call attention now to the highlights and briefly outline the executive committee's plans for the next few months.

No radical changes of policy have occurred during the year, but there has been a considerable expansion of our rather broad publicity work subsequent to the extra appropriation of ten thousand dollars which was made available to us by the educational bureau in June. In order that advantage might be taken of the noticeable upward trend in public purchasing, the best means of capturing for the paint trade as large a proportion as possible of the consumer's dollar was promptly discussed, and we concluded that the sound plan would be to multiply certain activities which had seemed to have

produced successful results rather than to attempt any flash of general advertising which could not be properly followed through with the funds in hand.

Already a substantial increase is apparent in the publicity gained through newspapers, magazines, trade and other journals and over the radio. The circulation can be counted in the millions.

Radio talks on the subject of beautifying the home with paint products have been broadcast by 132 stations.

Newspapers Cooperating

Newspapers are carrying stories and paint application hints to the number of 435, an increase from 161 in July. These include the New York dailies like the Herald-Tribune, the American and the Mirror, the Chicago Tribune and Herald Examiner' the Cleveland Plain Dealer, in fact the leading publications in most of the large cities. Important magazines and trade journals in many lines have accepted and published stories written by our staff and by other writers under their direction addressed especially to the various classes of readers. Good Housekeeping carried a story in the June issue.

Our motion picture films have been revised and brought up to date. One of them will be shown later here at the convention.

Our appropriation has been stretched to carry through the balance of this calendar year to prevent any interruption, until the new appropriation is decided upon, in the furnishing of our stories and radio talks which are in constant and increasing demand.

We recommend that more local paint clubs take advantage of the assistance which our staff can furnish in tying up our national propaganda with their local activities.

Our headquarters staff has been increased as has become necessary by the expansion of the work, and I wish to voice the appreciation which our committee sincerely feel for the loyalty of the staff in general and of the director, Miss Lonore Kent, in particular, who during the past four months especially has contributed many hours of personal time in overseeing the routine work and at the same time provided inspiration to a number of outside writers of our stories, and then contacted the more important editors with remarkable success in having the stories published.

Recommends Use of Slogan

In closing, I would like to repeat the recommendation that the save the surface slogan be used as widely as possible on the literature of every manufacturer. The investment made in this slogan should be jealously guarded. It is an industry asset of tremendous value. Use it on every piece of literature that you send out—in every advertisement—on your trucks and on your window displays. A nation with that phrase on its lips is a nation acutely aware of the need for paint protection. Make those seven powerful words work for you—"Save the Surface and You Save All."

This report is submitted by the executive committee of the save the surface campaign, composed of William A. Hart, M. L. Havey, William Knust, E. D. Peck, Clement K. Stodder, Carl F. Watter, and C. W. Eastwood, chairman. (The detailed report was as follows:)

Report on Save the Surface

Going full tilt! That's what Save the Surface Campaign has been doing ever since the educational bureau authorized the new appropriation for the extension of activities. The pages that follow indicate briefly—in picture form—the varied audiences being reached and how it's being done:—

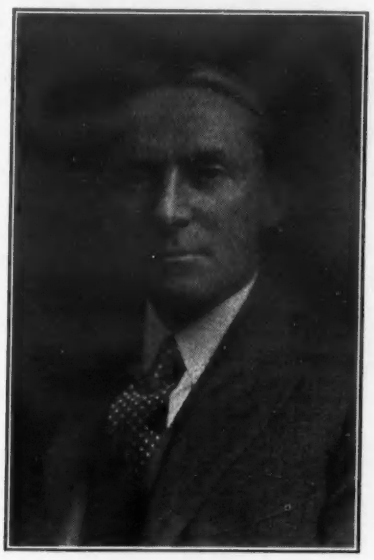
Story after story has called attention to the drastic need for paint protection. Leading daily papers in the largest cities in the country—as well as newspapers in hundreds of smaller cities—are printing save the surface stories. "Paint for Protection," they've been headed, "Present is Ideal Time for Painting," "New Paint Creates Confidence."

The real estate stories sent out weekly from headquarters at Washington are accompanied every other week by several pages of brief paragraphs—"fillers"—to be used by real estate editors. These paragraphs, which are receiving an amazingly cordial reception, talk about painting walls, floors, roofs and furniture. They talk about protecting every section of the house, and stress the importance of using quality products.

To the radio listener save the surface tells the tale of paint protection through "Color Magic" and "More Color Magic." These talks on beautifying the home with paint products have been broadcast by 132 stations. To give this material longer life, it has been collected in printed form and is now being used by college and high school teachers in forty-five States as a basis for regular classwork.

To the farmer save the surface addresses stories of paint-thirsty barns, of weathered fences and of machinery which depreciates because of paint neglect. Publications printing this material are read by every type of agriculturist—poultryman, tobacco grower, wheat raiser, dairyman. Accompanying the regular biweekly stories is a suitably pastoral illustration and several pages of short paragraphs—"Handy Hints on Painting for Mr. and Mrs. Farmer"—which are being warmly received by the rural magazines.

Out of the farm stories have grown a number of valuable contacts. Prompted by save the surface material, several in-



C. W. Eastwood
Chairman on Save the Surface

fluential editors have cooperated by offering their readers prizes for letters, essays and snapshots which point to the importance of paint on the farm.

To the homemaker, through her daily newspapers—go illustrated feature stories on home decoration. By intensive promotion, the number of newspapers utilizing this service has been increased from its total of 161 in July of this year to its present number—425. Formerly sent out in groups of eight—twice a year, the stories are now being re eased — eight every month. They are written especially to interest women in using paint, varnish, enamel and lacquer in every possible way —to protect and beautify the home.

To industrialist, shop foreman, retail merchant go stories stressing the importance of mill and factory maintenance —of shop and store upkeep, in fact, of proper paint protection for every type of building. These articles are being prepared for publication in magazines representing all of the important commercial fields. More than a score of stories have already been printed and as many more are scheduled by the editors for early publication.

To supplement these exclusive stories for the leading publications of various trades and industries, news releases are sent out at regular intervals to other magazines in the same fields—news stories stressing the importance of proper paint maintenance, and incorporating statements from men prominent in fields to which the releases are sent.

To the movie-goer a two-reel motion picture called "Home Is What You Make It," filmed with the cooperation of the Department of Agriculture and recently revised—new titles, new sequences—by save the surface. Told as an interesting story, but stressing the vital importance of paint—prints of the picture are distributed to rural audiences from headquarters in Washington, as well as through regular government channels.

The film tells the story of a young farmer who almost loses wife and happiness because his buildings, barns and farm machinery have become paint-starved eye-offenders. By study, planning and a hearty application of every type of paint product, the young man eventually succeeds in doubling the value of his property and winning back his family. The new version of the film will allow it an even wider circulation among rural property owners.

To the dealer save the surface offers a colorful (there are ten colors, to be exact) display. Individual dealers—or manufacturers—may have their names imprinted in the display without charge if half a hundred are ordered. In smaller lots, a nominal charge is made. Strong containers for the displays may be had at cost—12 cents. The charge for the display—which has been christened L3—is $1.25.

To the dealer, for the public, the campaign offers "The Guide Book of Painting and Varnishing." It, too, is color-full. selling or giving it to customers is an excellent way to stimulate the paint-buying urge. It's a business-bringer. Send for a free sample copy. Cost—in any quantity—10 cents each.

To the industry, for the industry, the campaign offers—and urges the use of—that seven-word paint-selling slogan:—"Save the Surface and You Save All"—Paint and Varnish. Make use of it!

President Kurfees: You have heard the report of the save the surface campaign. What is your pleasure?

Adam F. Daum: I move its acceptance and filing with the thanks of the association to that committee.

(The motion was seconded and carried.)

Nominating Committee

President Kurfees: I now wish to announce the personnel of the nominating committee of the manufacturers' association and this is a very important announcement to make at this time. It will be of interest to all of you. The nominating committee consists of the following:—Wells Martin, W. C. Dabney, H. L. Wilkinson, James B. Lord, Horace Felton, chairman.

This committee, in the event the amalgamation is favorably acted upon by our two associations, will consult with the nominating committee of the National Paint, Oil and Varnish Association in order to present a ticket for officers in the new association, which will be submitted during the course of the convention.

The next order of business will be reports of committees containing recommendations for resolutions.

Committee Reports

Robert Shannon: The first report is the report of the naval stores committee. Your committee would like to make the recommendation that the committee be discontinued and the reports be embodied in the reports of one of the other standing committees. I might say that in the proposed set-up of the association, no mention is made of the naval stores and petroleuem products committee, so this recommendation is automatically taken care of, but it might be well to secure action, Mr. President, on this recommendation at this time.

President Kurfees: You have heard the reading of this report, so far. What is your pleasure?

Mr. Trigg: I move approval.

(The motion was seconded, put to a vote and carried.)

Report on Naval Stores, Petroleum Products

The production during the current naval stores year will show an increase over last year of approximately 20-25 percent. It is interesting to know that in spite of this increase in production stocks of rosin at the primary ports have been reduced approximately 200,000 barrels, indicating that some consumers have stocked up on the low priced rosin, further that there is an increase in the consumption of rosin.

Gum turpentine is ruling at about the same level as a year ago. In fact, on some days it is identically the same. The same good demand that has prevailed for rosin has not been evident on turpentine. There was a recent loss of a ship destined to London of 7,000 barrels of turpentine. Ordinarily this would have a marked effect on the market. In this instance there was no reaction whatever except for one day.

The wood rosin manufacturers have developed several new grades of rosin which they have placed on the market this year, and which have met with favorable reception by the paint and varnish industry.

At meetings of the producers and factors recently held we understand that an effort was made to establish control of production. The producers have suggested licensing of rosin and turpentine, each package to have a tag costing 15 cents. If this becomes effective it will probably follow that both rosin and turpentine will show a radical advance. It hardly seems possible that the Agricultural Adjustment Administration will rule favorably on any such plan to establish control of production.

The situation as regards petroleum spirits is somewhat different inasmuch as we understand that production of crude is being controlled and this naturally affects the price of petroleum spirits.

Your committee would like to make the same recommendation that was made by its predecessors, that the committee be discontinued and its report be embodied in the reports of one of the other standing committees.

Mr. Shannon: There are two other committee reports which contain recommendations, the clean up and paint up campaign committee and the credits and collections committee. I would like, however, to call attention to the fact that both of these reports are on our program for this afternoon's session when they will be considered by our members.

Amalgamation

President Kurfees: The next order of business will be the report of our amalgamation committee, Mr. Roh, chairman.

Charles J. Roh: Mr. President and Members: So you will have in mind the men who considered this subject of a further amalgamation, I want to read their names to you:—Messrs. Figgis, Matlack, Ludington Patton, Elliott Phillips, Carl Schumann, Frank Sulzberger, Frank Cheesman, William Zinssser, and William Richter.

Before touching on our committee report at all, I want you to get the feeling that those men had in the consideration of the subject. They knew, because of the evolutionary procedure during the last ten years, that sooner or later we would come to the focusing point of bringing all the associations under one leadership and one association. You will recall that ten years ago we had six offices in six different localities. Clean up and paint up office was in St. Louis, save the surface office was in Philadelphia, the secretary of the Paint Manufacturers' Association of the United States was in Philadelphia as was the secretary of the Varnish Manufacturers' Association. The N.P.O. & V.A. office was in New York. The unfair competition bureau was in Washington, as was the scientific section. And so at that time we had seven or more methods of collecting subscriptions and paying dues.

One by one it was felt advantageous to bring the association activities under the head of the varying associations in the localities in which these secretaries' offices were located, but while they were moved to the same locality, they were rarely in the same building or the same office. But gradually we brought them to the same offices.

Then the thought came that we should have a meeting place in Washington. We had not yet reached the place where we felt we would want to move our activities to Washington. Later you remember that a study was made of the reorganization and the refinancing plan that brought down the methods of paying dues from six or seven to three.

I wanted to give you that background because some of you might have in your mind that this is something new and untried and unproven. On the contrary, the steps that have already been taken should naturally lead us into the final step of accomplishing the job in the manner in which it would be done if we were now organizing for the first time. In other words, if this were a new association, this probably is just the way we would set it up.

Many Models Studied

So we felt in the spirit of it when we considered the question. We had several meetings of the whole committee and we had several more of sub-committees to study the various sides of the question. We wanted to take advantage of all the up-to-date thinking with reference to reorganization, and with that end in view a number of our committee studied not alone all the constitutions and by-laws of our own associations, but the constitutions and by-laws of other associations, to see if we couldn't bring together in this one recommendation the best that would be fitted to our own activities.

There is one other important thing of the several questions we considered, and that is what was and has been our thinking in reference to our present set-up. We took to heart and studied and analyzed all the criticisms that we could think of that had been mentioned, whether justified or not, to see if in this one set-up we could answer most of the objections against the old association, whether merited or unmerited. Of course, there is always a difference of opinion with reference to those things, because some who know a little more about them and have a little understanding don't see it in the same way as those who perhaps have no information and don't look into it to see the purpose of certain divisions or subdivisions of the industry.

One of the things that we have all had to meet is the fact that members are unable to explain the purposes of the two associations and their tie-in with the educational bureau. I have known men who were actually on the inside of the work and some of them have been connected with the work of the association from the beginning, who just can't make the type of explanation that would be clear as to just what the purposes of the two organizations are and where the educational bureau functions for them.

There have been questions of the motives of the educational bureau. I agree with Mr. Trigg 100 percent on what he said this morning in reference to that particular body. Of course, we are all working for our own companies, but I have never

known the time when we approached the educational bureau on any subject when it wasn't viewed from the standpoint of the small as well as the large manufacturer, and the answer that came from that bureau if questioned by anyone could be justified from the position of any member of this industry. Yet we do hear that comment in reference to the bureau and it was considered.

Lack of uniformity of dues was questioned. I can understand that, because to have one basis of dues on a capital rating and another on the volume of sales, certainly must be confusing to the membership. We have endeavored to answer that in this new set-up.

Need for New Services

Manufacturers for industrial sales have complained for years that very little was done by the associations in their particular interest and from time to time comments have been heard from exclusive paint, varnish and lacquer manufacturers that there was no place to discuss the problems of their particular branch of the finishing industry. We have tried to answer that question in this new set-up.

Others have felt that there should be a place to discuss trade sales problems. All these and other criticisms were considered by the amalgamation committee and the amalgamation committee presents a simplified association plan, easily understood by all and a satisfactory answer to most of these criticisms. The way we reach that answer is by an appreciation of the other fellow's viewpoint, but this association won't be the answer to any single man's interest in the industry. It will be the answer to the needs of the entire industry. We know that in all associations we can't have our own way all the time, but the committee feels that if we look at the plan from the standpoint of all, we will find that it covers the major problems and major answer to our ability to get as well as to serve.

The report has been submitted to the executive committee of the National Paint, Oil and Varnish Association, it has been submitted to the board of directors of the American Paint and Varnish Association and the educational bureau. They reviewed the report, made the corrections that it seemed best to make, and this is the report that was finally adopted by them as a basis for amalgamation:—

The Amalgamation Report

It is sugested the present constitution and by-laws of the National Paint, Oil and Varnish Association, with regional or city associations under regional vice-presidents, be the basis of the constitution and by-laws of the new asociation, with the following suggested changes as to name, membership, executive committee, financial plan, dues and committee arrangements.

You just have to get that because it is very important—the idea of the change in memberships, the executive committee set-up, new financial plan and dues and committee arrangements. The reason I mention that is that I was talking to a fellow who looked over the constitution and by-laws the other day and he said, "It is the same old set-up." If it is the same old set-up, then our work has been in vain. But it isn't the same old set-up. It is a new set-up and I want to emphasize that it is a set-up to answer these questions and to bring us up to date. Not by any revolutionary idea but by an evolutionary method that is the combination of ten years of thinking in our association.

Name of the Association

The name of the association shall be the National Paint, Varnish and Lacquer Association, Inc.

It will be incorporated to take over the property and assets of the associations.

Membership

Membership in this association shall consist of individuals, firms, corporations, manufacturers and wholesalers of paints, varnishes, lacquers, water paints and kindred products; individuals, firms, corporations, manufacturers and wholesalers of materials used in connection with the manufacture of paints, varnishes, lacquers, water paints and kindred products.

It shall consist of five classes of memberships:

Class A Members

Class A memberships—individuals, firms, corporations, manufacturers of paints, varnishes, lacquers, water paints and kindred products.

They support all association activities: The scientific section, unfair competition bureau, save the surface campaign, clean up and paint up campaign, traffic bureau, and such other activities as may be agreed upon from time to time. They pay dues on a plan based upon their domestic sales of their products, as follows:

Now, this set-up of dues was formulated on this basis that it was the unanimous opinion of the committee that it should be set up so that all the membership paid their pro rata share toward the association activities and there should be only one class of membership to manufacturers, and that is the class that does support all these activities; and yet it was the unanimous desire on the part of the committee that the small manufacturers be favored in the set-up of these dues, and so if a study is made of the dues you will find that the pro rated dues, dependent on the sales, are less in proportion to what the larger manufacturers pay, the idea being that there is a great number of small manufacturers who should be in the membership, who are now in, who could not have an excuse for staying out because of dues.

I want to read these dues—there is a long list of them here, but I think we should carry away in our mind's eye the idea of how much it is going to cost us for this change, and you will find if you study it that it has been set up so that 95 percent of the membership of the American Paint and Varnish Manufacturers Association will pay a little less to the organization under this set-up. I want to impress that upon you, because it hasn't been set up to get more money. On the present volume of business, any increase will come as volume increases. The thought was that if we could set up this scale of membership dues, there would be many hundreds more members added to our association membership.

Class A Dues

Class A membership dues based on the domestic sales of paints, varnishes, lacquers, water paints and kindred products:

Class.			Amount.
1.....	Under	$50,000	$25.00
2.....	$50,000 to	100,000	50.00
3.....	100,000 to	150,000	100.00
4.....	150,000 to	250,000	150.00
5.....	250,000 to	500,000	300.00
6.....	500,000 to	1,000,000	600.00
7.....	1,000,000 to	1,750,000	1,000.00
8.....	1,750,000 to	2,500,000	1,500.00
9.....	2,500,000 to	5,000,000	2,500.00
10.....	5,000,000 to	7,500,000	3,750.00
11.....	7,500,000 to	10,000,000	4,750.00
12.....	10,000,000 to	12,500,000	5,750.00
13.....	12,500,000 to	15,000,000	6,750.00
14.....	15,000,000 to	20,000,000	9,000.00
15.....	20,000,000 to	25,000,000	11,000.00
16.....	25,000,000 to	30,000,000	13,000.00
17.....	30,000,000 to	35,000,000	15,000.00
18.....	35,000,000 to	40,000,000	17,000.00
19.....	40,000,000 to	45,000,000	19,000.00
20.....	45,000,000 to	50,000,000	21,000.00
21..	1/25th of 1% over 50,000,000 plus		21,000.00

Here is an innovation that I want particularly to call your attention to because it is very important to you. Class A members are entitled to vote at the national convention and to receive the scientific section circulars. They are also entitled to one or more memberships in each regional or city association on payment of the regional or city association dues. When you pay your dues, you also pay the national assessment portion of your local membership dues. In other words, you make just one payment. If you have a member in the New York club, all he pays is the difference between the present dues and the $20 national assessment, or $30 in New York.

Class B Members

The next is class B members, and this isn't arbitrary because it takes in supply members. Class B members are individuals, firms, corporations, and manufacturers of material used in connection with the manufacture of paints, varnishes, lacquers, water paints and kindred products. They support all association activities—the scientific section, unfair competition bureau, save the surface campaign, clean up and paint up campaign, traffic bureau, and such other activities as may be agreed upon from time to time—on a uniform plan based on their domestic sales to the industry as follows:—

This schedule is the same as for Class A members, with the exception that there has been deducted from that amount the approximate amount they would have paid as American Paint and Varnish Manufacturers' Association members. In other words, certain members contributing on the graduated plan now pay the same as the manufacturing members, but under this new plan those members would not have been members of the American Paint and Varnish Association, and consequently have paid anywhere from one to seven hundred dollars less in membership than manufacturing members, and so there has been deducted in the larger brackets approximately $500 down to $100 in the smaller brackets.

Class B Dues

Class B membership dues based on domestic sales to manufacturers of paints, varnishes, lacquers, water paints and kindred products:

Class.			Amount.
1.....	Under	$50,000	$20.00
2.....	$50,000 to	100,000	40.00
3.....	100,000 to	150,000	80.00
4.....	150,000 to	250,000	120.00
5.....	250,000 to	500,000	220.00
6.....	500,000 to	1,000,000	440.00
7.....	1,000,000 to	1,750,000	800.00
8.....	1,750,000 to	2,500,000	1,200.00
9.....	2,500,000 to	5,000,000	2,200.00
10.....	5,000,000 to	7,500,000	3,200.00
11.....	7,500,000 to	10,000,000	4,400.00
12.....	10,000,000 to	12,500,000	5,400.00
13.....	12,500,000 to	15,000,000	6,400.00
14.....	15,000,000 to	20,000,000	8,500.00
15...	1/25th of 1% over	20,000,000 plus	8,500.00

Class B members have representation at the national convention through regional or city association delegates provided by the by-laws, and will receive all scientific section circulars. They are entitled to one or more memberships in each regional and city association on payment of the regional or city association dues.

Class C Members

Individuals, firms and corporations who are not Class A or B members, but who are affiliated with regional or city associations and pay $20 national dues in addition to the dues prescribed by the regional or city association. They have representation at the national convention through regional or city association delegates as provided by the by-laws. National dues are to be remitted by the regional or city treasurer to the national treasurer.

Class D Members

Individuals, firms, corporations and manufacturers of paints, varnishes, lacquers, water paints and kindred products in Canada may become members by paying annual dues in the National Paint, Varnish and Lacquer Association of $50 annually and may secure the scientific section circulars by paying $100 additional to the national treasurer. All other classes of Canadian members may affiliate by becoming Class C associate members. That is practically the same set-up that exists now in Canada.

Class E—Honorary Members

All present honorary members of the two associations and the educational bureau shall become honorary members of the new association.

Scientific organizations at home and abroad and foreign manufacturers of paints, varnishes, lacquers, water paints and kindred products may receive the scientific section circulars by payment of $100 per annum.

That is the financial side of the new set-up, which of course you will all see is different and yet very, very simple to understand.

The City Set-Up

I want to emphasize what I am going to read now, because this is the city set-up, and it takes care of any number of questions that have developed in the last three months. If we had had this set-up, it would have been very, very simple to have crystallized the thought of the associations very quickly and without any misunderstanding, and of course nobody will ever know what Mr. Trigg has done from that standpoint. I think few of us realize it. But if this set-up had been in operation, we could have crystallized the thought and got the attitude very rapidly.

The following standing committees are recommended:—

Trade Sales.
Industrial Sales.

These two committees are suggested to bring about a closer contact with the National Paint, Oil and Varnish Association and the regional and city association. There has been no direct contact between our regional or city associations and the national office, except indirectly through committees that have been appointed. There has been no tie-in of committees with the national office except as occurred once a year when the national office got their reports.

The chairman of these national committees shall be appointed by the president of the association. It is further recommended that regional or city associations be represented on these committees by an outstanding member in trade sales and industrial sales. They shall be selected by the national president and the president of the regional or city association. The regional or city member on the national committee shall be the chairman of the local trade and industrial sales committees.

It shall be the duty of the local committee chairman to organize his division of the industry in the region or city in which he is appointed, organizing those members interested in trade sales in the industry, those members interested in lacquer sales to the automotive accessory trade, etc., members supplying paint to important industrial plants in the state and national government, and members selling lacquer, both clear and colored, to industrial accounts.

The general manager shall assign secretaries from national headquarters to work with each committee. That is another tie-in that brings us in constant touch with the national association.

Personnel of Committee

To make it a bit clearer perhaps, it will be the duty of the president to select the outstanding sales member as the chairman of that committee. The president, in connection with the local presidents, the regional or city presidents, will select the outstanding trade salesman in that locality, who shall be a member on the national committee, but it shall be his duty to organize at least those two groups if they have interests in that locality, in the trade sales in that district and the auto accessory sales in that district. In other words, he will organize these two groups who will discuss local and national problems in trade sales and have the supervision of and the interest of a local secretary or a national secretary.

It will be the duty of the president to select an outstanding industrial manufacturer and the president, in connection with president of the local club, will select in each local association the outstanding industrial member who will organize three groups if there are three interests in that locality. The question might arise, why should he organize three if there are not three interests in that locality? Well, there might be just one interest of paint manufacturers. There might be just one interest of lacquer manufacturers. In New York there might be three, in other localities there might be only two, and in others, only one. But I want to get over the fact that that will be a direct tie-in with the national committee and, of course, just naturally it will be tied in with the president and the executive committee, and we haven't had that before. That is new and different, and to me it fills a long felt want, and I want to add emphasis to it.

Executive Committee

The executive committee shall have supervision of the following committees and such other constructive activities as are deemed advisable. These committees shall work directly through the general manager and the secretaries appointed. In other words, it was felt by the amalgamation committee that these committees that have worked in conjunction with or as a direct activity of the educational bureau should be given directly in charge of the executive committee of this new body which takes the place, of course, of all the governing bodies that have heretofore had this in charge. Those committees are the unfair competition bureau, the budget and finance, the scientific section, the save the surface committee, the clean up and paint up committee, and the traffic bureau.

The following committees and such other committees as may be authorized from time to time shall be organized along the same general lines as the key committees, the trade sales and industrial sales, and I wil read those: Kindred products, distribution, simplification, constitution and by-laws, membership, production clubs, and legislative.

In other words, these committees and others, if they develop to a place of importance in the industry, can be set up in the same manner as the trade sales and the industrial sales committees provided the need is present.

National Advisory Committee

This committee shall consist of the presidents of the regional and city associations with the national president as chairman and shall meet prior to the annual convention. It was felt that these local presidents appointed, who may be A, B or C members, could bring to the national organization their reactions for the year for consideration perhaps at the convention if they so decide.

Initiation Fee

There shall be no initiation fee until after March 1, 1934. The thought about that was, why talk about $25 when we are trying to get together? The feeling was, let's let the executive committee of the association consider that after March 1. Just now it isn't nearly as important as getting members.

Officers and Elections

This is the most important change and answers all the criticisms of all bodies. The executive committee of the N.P.O. & V.A. and the board of directors were cumbersome and hard to understand, even by their own members, and were considered by most largely honorary in some of the positions. I needn't repeat here what has been said about the board of directors of the American Manufacturers' Association and the educational bureau, but here is the answer to it.

The officers of this association shall consist of a president, a vice-president and a treasurer selected from the Class A members, and five regional vice-presidents to be selected from the membership. There shall be an executive committee to be composed of the president, vice-president, treasurer, and eighteen elected members, twelve of whom must be paint, varnish and lacquer manufacturers, three of whom must be class A members but not necessarily manufacturers of paint, varnish and lacquer, and three of whom must be class B or C members, the class B or C members, to have all the rights of the other members on the executive committe except that they shall not be eligible to be chairman or vice-chairman thereof and they shall not vote on subjects that directly affect the paint, varnish, lacquer, and kindred products industry.

Elected members of the executive committee (notice this is elected and not chosen) shall hold office for three years, except that there shall be elected at the first meeting of the association the eighteen members as provided above, six of whom shall be elected to serve for one year, six of whom shall be elected to serve for two years, and six of whom shall be elected to serve for three years. Each group of six shall consist of four paint, varnish and lacquer manufacturers. One must be a voting member but not necessarily a manufacturer of paint, varnish, and/or lacquer.

Nominations

All officers of the association and members of the executive committee shall be elected by the members at the annual meeting. The nominating committee already appointed by the American Paint and Varnish Manufacturers' Association (this is to provide for what might happen in case you approve the plan) and the committee appointed by the National Paint, Oil and Varnish Association shall serve as a joint nominating committee to nominate officers and members of the executive committee to be voted on by the members at the first meeting of the new association.

There may be additional nominations made from the floor of the convention and those receiving the largest number of votes for the different offices shall be declared to have been elected.

Not less than sixty days prior to each annual meeting, after the first meeting of the association, the president shall appoint a nominating committee consisting of seven members, one of whom shall be the retiring president in the case of the annual meeting following the first meeting and thereafter. At least two of the members of said nominating committee shall be past presidents. This nominating committee shall present nominations for officers and six members of the executive committee, constituted as provided above, at the present time and during each annual meeting, and there may be additional nominations made from the floor, and the person receiving the majority vote for the respective positions shall be declared to have been elected.

Except for the one and two-year-term members to be elected at the first meeting, members of the executive committee shall serve for a three-year term and may not serve for more than two consecutive terms.

The officers of the executive committee shall consist of a chairman and a vice-chairman, who shall be elected annually by the executive committee from its membership. In no case shall any officer of an executive committee be allowed to serve for a period longer than three consecutive years. The secretary of the executive committee and the associations shall be selected by the executive committee, but not necessarily from its membership.

The president of the association shall appoint the person or persons to fill any vacancy in the membership of the executive committee occurring between annual meetings, subject to their approval, such appointments to be made for the unexpired term vacated. The executive committee shall fill any vacancy which may occur among the officers prior to the annual election.

In view of the fact that this report was approved by all three of the directing bodies of the associations, to bring the matter before the convention, I would like to recommend that the report of the amalgamation committee be adopted and that the American Paint and Varnish Manufacturers' Association be dissolved, with further recommendations that their properties and functions be transferred to the new association.

Discussion of Amalgamation

President Kurfees: You have heard the report of the amalgamation committee presented by its chairman, Mr. Roh. This is a very important report. You have also heard the resolution that he presented. Are there any questions or comments?

C. J. Schumann: May I suggest that resolution should also include authorizing the present officers to perform any acts necessary to bring this thing to a conclusion? I think that should be a part of that resolution.

Mr. Roh: If this report meets with the favorable action of the convention, there are several resolutions that will have to be passed to close the affairs of the American association.

S. A. Bennett: If we officially dissolve the association by the adoption of that

resolution, can we then adtopt the other resolutions?

Mr. Trigg: I should like to say just a word on this. Mr. Roh has covered this whole subject most thoroughly and it has been a matter of a great deal of consideration for some time. It isn't a last minute suggestion that is being brought here to you. I think as Mr. Bennett has pointed out, there might be a little danger in our passing a resolution at this minute which dissolves the American association. I think, with Mr. Roh's approval, that the motion might better be approval of the plan, but eliminating the reference to dissolving this association at this minute.

I think we can hardly pass upon that until the joint meeting tomorrow morning when our attorneys will be here. They have been working on the necessary resolutions that have to be carefully drawn legally, because you know our two present associations are corporations and it is planned to have the new association incorporated. We own property of considerable value. Therefore we must be careful to see that all of the legal technicalities are properly looked after, and I suggest that change if it is agreeable to Mr. Roh.

Mr. Roh: I would say, Mr. Trigg that is perfectly agreeable to me. There are certain provisions with reference to dissolution that call for a report of the membership present. If the members of the American association will be here, as we are here now, we can hold that over, because the New York laws, under which we are incorporated, call for that type of vote.

L. P. Moore: As a very consistent opponent of amalgamation over a long period of years, I would like to move the adoption of the committee's report and its recommendation.

H. M. Howard: Is it in order at this time to propose any recommendation of possible change?

President Kurfees: I suppose so, yes.

Suggests Nomination Change

Mr. Howard: I would like to suggest that the nominating committee be appointed three months prior to the election, and that six weeks prior to the election they send out the names of the six members of the executive committee to be elected, showing the cities or the clubs from which they come and the names of the concerns with which they are connected, and that an opportunity be given for a percentage to mail back—I don't know what it would be; it might be twenty-five members—who might petition three weeks prior to the election that other names be added, provided there was only one name from any one city. In other words, we wouldn't want to have six names from New York in this alternative. Those names should be mailed out three weeks prior to the election, and if there are other nominations a printed ballot should be provided for the election. That is for the six members of the executive committee.

President Kurfees: This wouldn't apply to this meeting. You would want that to apply after amalgamation for the election another year?

Mr. Howard: Yes. It isn't possible this year.

President Kurfees: Mr. Roh, will you respond to that suggestion?

Mr. Roh: I don't think that is a question for me to answer. I think it is a question for the convention to answer. This committee has given this considerable thought and we feel this is the best way, but it is just the committee's recommendation.

Ludington Patton: As one of the other opposers to amalgamation, I would like to second Mr. Moore's motion to adopt the report.

W. F. Yarnall: A report as comprehensive as this one can hardly be digested by those of us not heretofore familiar with it, in a single reading. I am very much impressed with the set-up which has been outlined for us, but personally I would be glad to have a little more clarification of the classes of membership. I am not just clear in my own mind as to the difference between the A, B and C members.

President Kurfees: Would you like to have those classes reread?

Mr. Yarnall: Perhaps they could be differentiated in plain language, without rereading them.

President Kurfees: Mr. Roh, perhaps you can elucidate a little on this.

Classification of Members

Mr. Roh: All manufacturing members —all members who manufacture, I should say, paint, varnish and lacquer, and kindred products, are class A members. In other words, all the members of the American Paint and Varnish Manufacturers' Association are class A members. That is the only classification they have, the only basis on which they pay dues.

The manufacturers who supply the paint, varnish lacquer and kindred products materials are under two classifications:—the one classification (B) that supports all the activities and who contribute on a plan that helps support those activities, and the other classification (C) that joins the national association through regional or district associations and pays $20.

A. E. Daum: I should like to ask a question. The class A members have a direct vote at the convention and the class B members do not have a direct vote at the convention. Do I understand that correctly?

Mr. Roh: Class B and C members have representation in our conventions as delegates representing the local clubs, there being one delegate to each ten members of the local club, and the way that is figured is this:—that the N. P. O. & V. A. through this delegate representation, on questions pertaining directly to the manufacture of paints, varnish, lacquer, water paints, and kindred products, have never had more than that much to say before.

In other words, the questions that they decided at their meetings were questions that pertained to promotional activities, and directed to the elevating and creating the spirit of friendliness and fraternal feelings, and all the nice things, and we want that continued, but they never had a voice in deciding the policies heretofore of the manufacturers of paint, varnish, lacquer, water paint, and kindred products, and I don't think they want it now.

Situation of Canadians

T. F. Monypenny: I might preface my remarks by saying that many of you older men here know that our company has been a member of this association, attending your conventions, for many years. We have enjoyed the privilege, and considered it a great privilege to be able to do so. What I am going to say will not affect our company whatsoever. We will still be glad to pay our way, and I think we get very good dividends on the money we invest, but I would like a little clearer answer on this. I notice that class A members, manufacturers under $50,000, will pay $25, and they will get all the privileges of your association. They will get all the scientific reports, et cetera. When you come to the Canadian manufacturers over here on page 6, "Individuals, firms, corporations, manufacturers of paints, varnishes, lacquers, water paints and kindred products in Canada shall pay annual dues of $50. Scientific circulars may be obtained by paying $100 per annum additional to the national treasurer."

I am afraid, gentlemen, that insofar as the American Paint and Varnish Manufacturers' Association is concerned, it is not going to do you any harm because there are only a few of us over there who are members of this association and I believe those who are will continue, but I have in mind that a number of the smaller manufacturers who are members of the Toronto club will not remain in the national association. You are going to lose them. They won't pay the money, I can tell you right now. You are going to lose them, and the probability is you may lose the contact of the Toronto club with your activities over here. I am just a little fearful of that. Mr. Roh may be able to clarify that.

Mr. Roh: I would like to answer Mr. Monypenny, if I may. We have two or three very staunch supporters in Canada, and we certainly want to do everything we can in the United States to sustain that and to create a feeling that we want them to go along with us. I am quite sure that the committee agrees with me when I make the proposition to Mr. Monypenny that if they would like to go on the United States scale we would be tickled pink to have them do it. But there is this that has come up in the past and which we want recognized, and that is that we adjusted the scale of dues in Canada three or four years ago to meet the demand of the Canadian manufacturers, and it was done at a lower scale than prevailed in the United States, and what we are doing here is exactly what we did then. In other words, we did not want to raise the price. We did not think you wanted us to lower it, but if you want to go on the American scale, God bless you and come.

Mr. Monypenny: I think Mr. Roh probably did not get my point. I am not speaking for those members who are now members of the American association. We appreciate very much the consideration that was shown to us by the reduced dues that we were asked to pay, and I think it is only right, gentlemen, that we should, because we have not been able to enjoy all the activities that you enjoy over here; they don't apply to Canada. We are able to avail ourselves of the scientific section just as well over there as you are here, but there are many other activities of your association that do not pertain to Canada at all and that are of no interest to us Canadians.

What I am getting at are the small manufacturers over there, and we have a number of them who are members of the Toronto club. If you ask them $50 for membership in this organization, they will say, "Nothing doing." There is provision made for the small manufacturer in the United States, but there is no provision made for the small manufacturer over there. The small manufacturer and the large manufacturer pay the same, $50.

President Kurfees: Are there any further remarks?

Mr. Trigg: I would like to suggest this in answer to what Mr. Monypenny has said, to see if this would meet with his approval, that we change the provision so that any Canadian manufacturer who qualifies as class A manufacturer might come in by the payment of the regular dues as provided for the United States manufacturer, provided those dues were less than the $50 plus $100 that now applies to the larger manufacturer. In other words, the maximum would be the $50 and $100, but a small manufacturer who did, say, a $50,000 business or a $100,000 business might come in by the payment of the regular standard United States dues. How would that strike you?

Mr. Monypenny: I think that would be better.

Wants Further Discussion

W. H. Jarden: A very excellent resolution has been offered here. No comment has been made, and I believe that some discussion should be offered on this resolution to give everybody a part in the selection of their executive committee. I believe that Mr. Howard's resolution is a very excellent one, and I second it. I would like some discussion on it.

President Kurfees: Are there any further remarks? We have some two or three resolutions before us now. Shall we have a vote on the amendment first?

C. J. Schumann: Just as a matter of information, I presume if this resolution is passed it will be subject to any changes in the new constitution and by-laws which will be adopted tomorrow. That would cover Mr. Howard's resolution.

Mr. Roh: This is just two or three pages, and if this is adopted tomorrow, we will have to consider the constitution and by-laws which take care of the election of these officers and which take care of all the other provisions in this recommendation. This is just the plain language of the report. The other is put in the constitutional language, in the language under which we are going to operate.

President Kurfees: Are there any further remarks, gentlemen?

Moritz Arnstein: May I suggest that in order to facilitate this thing and bring it to a head, to approve the report of the amalgamation committee, and leave the dues and the other articles in there that the members feel they want to discuss at a later date or in a broader sense, to give an opportunity for the body to consider them. I would suggest that we pass the vote on the recommendation to abolish the old organization and start a new organization, and some of the details that the members are widely interested in, to be left open for discussion either for this afternoon or tomorrow.

H. M. Howard: As I understand it, any recommendation of a change approved at this meeting would be the approval of this organization.

President Kurfees: Whatever we approved would be the approval of this organization.

Mr. Howard: And I think this is the time to do it. If you leave the thing in abeyance, simply approve this amalgamation plan which will virtually approve the new constitution as read, some of the thoughts which some of us have on these changes may be lost.

President Kurfees: Would you be willing to defer your motion until we have what would be considered, I reckon, a joint meeting.

Mr. Howard: Yes, if they will be brought up.

Mr. Shannon: It is the intention, Mr. Howard, of the constitution and by-laws committee at tomorrow's session, to present in detail the proposed constitution and by-laws of the new association, and it might be better to defer your recommendation until we act upon that report tomorrow.

Mr. Howard: I will bring it up then.

Mr. Trigg: In the meantime I would like to suggest, Mr. Howard, that you talk to the committee on constitution and by-laws prior to their coming in with their report, take your idea to them and see if you can't sell it to them.

President Kurfees: Thank you, Mr. Howard.

Mr. Jarden, will you withdraw your second to that motion?

Mr. Jarden: I will.

Motion for Approval

President Kurfees: Thank you, sir. Now I believe we have a motion before us presented by Mr. Moore. Will you repeat that motion? That was for approving the amalgamation.

Mr. Moore: I move that the report of the committee be accepted and approved.

President Kurfees: It is moved by Mr. Moore that the report of the committee be accepted and approved, and seconded by Mr. Patton. Are you ready for the question?

Mr. Trigg: I would like to ask whether that includes the suggestion made by Mr. Roh that we hereby abolish this association. Is it intended to include that, Mr. Moore? If it is just a matter of approving the report without putting the American out of business at this time, that is all right, but I do think we would be making a very great mistake if we disbanded, dissolved, this association here and now. I think that our action in approving this report ought to be subject to the National Paint, Oil and Varnish Association taking similar action.

Mr. Moore: That was explained just before I made my motion. That was accepted.

Mr. Trigg: That is all right so long as it doesn't mean we hereby dissolve. We have some other things we ought to clear up. Mr. McFadden, you can say something on the legal side of this thing.

Legal Aspects

General Manager McFadden: First, I want to remind you that you cannot abolish this association today. There are certain legal steps to get out from under your charter as a corporation in New York. You have to give due notice to Albany, and give them an opportunity to see whether there are any unpaid bills against this association, taxes, et cetera. So that a certain amount of time must elapse for those formalities.

Second, this body owns certain property, real estate in Washington, and funds in banks, and it must wait until there is another proper legal body, ready and able to take over those properties, if it is your desire that they should do so. That is another reason why this body cannot go out of existence today.

But you can resolve that you approve of amalgamation on condition that the N. P. O. & V. A. take similar action, and direct your officers and directors to take such steps as may be necessary to wind up the affairs of this corporation, to surrender its charter and turn its properties over to the successor after it is legally capable of holding the properties. That, as I see it, is the general principle on which your procedure should be based. I do not know exactly what the resolution is that is before you at present.

Mr. Roh: Just to clear this up, Mr. Macdonald and Mr. McFadden have placed in my hands a lawful resolution covering dissolution of the American Paint and Varnish Manufacturers' Association if you act favorably on the report. I have the resolution here. I would just as soon read it to you now, before the acceptance of the amalgamation report, if you would like to have me, and I think perhaps that might be a good thing:—

Whereas, this association agrees in principle with the report of the amalgamation committee recommending the dissolution of the American Paint and Varnish Manufacturers Association, Inc., and the creation of a new association to succeed said association; and

Whereas, it is proposed that a general meeting of the industry be held at 9:30 a. m. on October 31, 1933, to discuss and act on the details of a plan to create such successor association, such plan to be submitted in a report of the constitution and by-laws committee; now therefore be it

Resolved, subject to similar action by the National Paint, Oil and Varnish Association, Inc., at its forty-sixth annual meeting: That the officers and directors of the American Paint and Varnish Manufacturers Association, Inc., and/or their successors, and each of them, be and they are hereby fully authorized and directed to take, as soon as may be, all appropriate and necessary action to surrender the charter, corporate name, et cetera, of said association, and to dissolve the same.

Resolved further: That, subject to similar action by the National Paint, Oil and Varnish Association, Inc., and provided that a plan of organization and by-laws for such proposed successor association be agreed on and adopted at the said general meeting of the industry on October 31, 1933, or any adjournment thereof, the officers and directors of the American Paint and Varnish Manufacturers Association, Inc., and any committee or committees thereof, and/or their successors, and each of them, be, and they are hereby fully authorized and directed to take, as soon as may be, all appropriate and necessary action to transfer and convey any and all property of the said association to such successor incorporated association when it is created in accordance with law, and to do all things necessary to carry into effect all resolutions applicable to the dissolution of this association and the organization of a successor corporation, heretofore or hereafter adopted at this meeting; provided, however, that pending the transfer and conveyance of property, rights, and assets of the American Paint and Varnish Manufacturers Association, Inc., or any committee or committees thereof to the National Paint, Varnish and Lacquer Association, Inc., the title to such property shall be and remain in the said American Paint and Varnish Manufacturers Association, Inc., and the finances and expenditures of such association shall be directed and made in accordance with its constitution and by-laws as at present; provided further that the action on any proposal to provide for a successor association shall be taken only on the votes of members in good standing of the American Paint and Varnish Manufacturers Association, Inc., and of the National Paint, Oil and Varnish Association, Inc., who shall vote by delegates.

Mr. McFadden Clarifies

General Manager McFadden: This is such an important matter that I want to reiterate the gist of what your treasurer has presented, so that there will be no misunderstanding as to exactly what is being done.

If Mr. Moore, or whoever made the preceding motion, chooses to adopt this resolution in place of the one that was made, with the consent of his second, and you vote on it, you will then be voting under three conditions:—First, that similar action is taken by the N. P. O. & V. A.; second, provided that the plan of reorganization and the new by-laws are approved tomorrow. There will be plenty of opportunity to discuss those, and if you do not approve them at that time, then that condition is not met and you have not dissolved. Third, provided that at that meeting the voting shall be as indicated.

This, in fact, is a merger of the two associations. They could continue under their present forms, but they have decided to live in the same house. It is, therefore, solely their responsibility. We hope that if the plan is approved, the new association will be more attractive to new members to come in, but we want them to understand that there is no lack of consideration for them in excluding them from voting on this question, which is a matter affecting the two associations.

Under those three conditions, then, you are voting on the question of whether you will authorize your officers and directors to take the necessary steps to dissolve this corporation, and you are authorizing those officers and directors to continue in office during that short period while this association's affairs are being terminated and to handle your funds under our present by-laws in the usual way. The reason for that is that we have funds that are to be withdrawn by check bearing the signature of the present officers. We could elect new ones, but this association would continue presumably only a few weeks, and in order to avoid a great amount of detail and waste of time and confusion with the banks in getting new signature cards, your resolution reads that way.

Is it acceptable to the person who made the original motion, and his second, that the resolution that has just been read, embodying the same ideas, be substituted?

Mr. Moore: I still maintain it is the same as my motion. Mine was edited. I understand that resolution is a recommendation of the amalgamated committee. I move the adoption of the recommendation.

J. C. Adderly: We have before us a committee report, and the motion that has been offered in an endorsement and acceptance of that committee report. That seems to be properly in order as the first action before any detailed resolution is offered. Cannot we take the vote on the motion to endorse and accept this committee report, and then proceed with the other formal resolutions which I understand are to be offered?

General Manager McFadden: Very well, is there a second to that?

(The question was called for.)

Vote Is Called For

Mr. Moore: Mr. Chairman, I move that the report of the amalgamation committee be accepted and its recommendations adopted.

President Kurfees: All in favor of that motion will please rise. We will have a standing vote on this. Mr. Shannon will do the counting.

(The members in favor of the motion arose and were counted.)

General Manager Mcfadden: A vote of this kind in accordance with law requires that two-thirds of the membership of the association approve it. There are not enough votes in the room to approve the action at the present time. What is your total, Robert?

Mr. Shannon: We have eighty-six, and then we have some—

General Manager McFadden: (interrupting) Eighty-six members have just voted and we have about twenty proxies.

Mr. Shannon: Twenty-one proxies. Are there any members present who have proxies that they would like to vote at this time?

Mr. Hancock: I have the proxy of the Vane-Calvert Paint Company, which I would like to vote in favor of it. The proxy is made out in my name.

Mr. Shannon: Is the representative of the duPont Company present? Did you vote?

Member: Yes.

Mr. Shannon: Mr. Van Houten is authorized to vote for W. P. Fuller & Co.; Mr. Conklin for the Brooklyn Varnish Manufacturing Company; Mr. McFadden for the General Paint Corporation; Dr. Plumb for the Eagle Paint Works; Mr. Hancock for the Louisville Paint Manufacturing Company; Mr. Rice for the George H. Shaw Company; Mr. Rice for the Cleveland Paint & Color Company; Mr. Kurfees for the Marine Paint & Varnish Company; Mr. Trigg for the Ault & Wiborg Corporation; Mr. Sulzberger for the Federal Varnish Company; Mr. Jarden for the Hook Paint & Chemical Works and for the Pecora Paint Company, the McCloskey Varnish Company, Sahlin Color Company, and India Paint & Lacquer Company.

Unless there are objections from these gentlemen their votes will be recorded as favoring the committee report.

Mr. Adderly: Point of order. I should like to have the chair rule on whether this motion requires such a majority as is required by law for a formal act of amalgamation. I call attention again that this is merely the adoption of the committee report, and the later resolution on amalgamation is yet to be offered. This is nothing but an ordinary action of the convention, at which a majority vote may be taken. I would like to have a ruling on that.

President Kurfees: I will ask our attorney to explain that.

General Manager McFadden: Mr. Addeerly, if the motion that was just acted on had been the one that you suggested, I think you would be right, but as I understood Mr. Moore we are not only adopting the report, but approving the resolutions contained therein.

Mr. Moore: Approving the recommendations in the report.

A Parliamentary Puzzle

General Manager McFadden: To cut this Gordian knot, I suggest that we accept this vote as approval of the report, and that we leave open the question of dissolution by way of not adjourning this session sine die but adjourning subject to call, and meanwhile we will check with the registration desk in the hotel to see if we have the necessary number of people here, so that we can vote together; otherwise we will try to provide for legal voting by mail.

Mr. Walker: There has been a great deal of discussion on this subject that it seems to me was unfortunate. The original motion should be to approve the report. If you approve the report, you approve of the recommendations as to dues and everything else that is in the report. It seems to me that if we simply receive the report without the resolution, that is all that we need to do at this time. Then we have the right, without stulifying ourselves, to change any paragraph we like when the constitution comes up. If the other vote has been not of effect, I would move that we simply receive Mr. Roh's report with thanks, without his resolution. Then if that is carried, take up your resolution that has been read to us and let's pass that now.

Mr. Waltham: Rising to a point of parliamentary law, Mr. Moore's motion is the first one on the floor, and must be taken care of one way or the other. Whether we vote on it or not, it must be taken care of according to law. So let's have the question on Mr. Moore's motion.

President Kurfees: It seems to me that Mr. Moore's resolution and Mr. Walker's are practically the same.

Mr. Waltham: No, they are not. One is approving and the other is receiving.

Mr. Schumann: I would like to ask for a little information. I do not think that any vote we take now would be binding us with regard to the details of the constitution and by-laws of an association yet to be formed. As I understand it, we are giving an expression of our opinion, and tomorrow every one of us as individuals, regardless of what action is taken here today, can express his approval or disapproval of each and every code of the proposed constitution and by-laws of the new organization, regardless of what our amalgamation committee has reported today. We are not binding ourselves in any way, shape or manner. As a matter of fact, I would like Mr. McFadden's opinion, but it seems to me that before you can legally adopt a constitution of an organization you must first have that organization legally established.

General Manager McFadden: I think you are right, Mr. Schumann, that, as we stated, you would be voting to dissolve on condition that after your detailed discussion tomorrow you all agree upon the new proposal. So that you are not voting on the details of that agreement at present, and you are leaving it open subject to the condition that you do agree on that.

Now, it seems to me that you have already voted to accept and approve the report of the committee, but the report contains recommendations. Those would have to be acted on by two-thirds vote. We have seen that we are not able to get the two-thirds vote now. With that understanding have we not completed the subject, and should we not continue with the formality of getting the two-thirds vote on the recommendations, by mail if necessary?

Mr. Monypenny: I am a little muddled about this thing, but my understanding is that you are voting now on the principle of amalgamation. This meeting here is voicing its opinion on the principle of amalgamation. In receiving a favorable vote, all you are doing is to instruct your officers to carry out the necessary steps to bring about the amalgamation, but I do not think you are committing them to any by-laws or constitution or anything else. You are now simply voting on the principle of amalgamation.

General Manager McFadden: It seems to me that is what you have done, gentlemen, in taking the vote on Mr. Moore's resolution.

Mr. Trigg: I guess we are kind of mixed up on this thing, and with your permission I would like to try my hand at stating my understanding of what we are doing: That we are receiving the report of this committee; that we are approving in principle the proposal to amalgamate the two associations, subject to the conditions which Mr. McFadden outlined and subject to presentation tomorrow morning of the constitution and by-laws which, if approved, will be followed by the presentation tomorrow morning of the necessary legal and formal resolutions to carry the thing forward to its conclusion. That is my understanding of what we are doing, and if that isn't clear and it isn't too informal for me to do it, I would like to make that as a motion to clear the slate, if that is the opinion of the gentlemen present.

(The motion was seconded and carried unanimously.)

Memorial Resolutions

H. S. Felton: The resolution which I have been requested to present is as follows:—

George V. Horgan

Whereas, Death has removed not only from our service but from our friendly companionship, the late general manager of our association, George V. Horgan; and

Whereas, we realize that in Mr. Horgan's death we have lost a devoted servitor, a wise counsellor and a faithful friend; therefore be it

Resolved; That the American Paint and Varnish Manufacturers' Association in convention assembled express by unanimous vote their sense of the irreparable loss they have suffered in Mr. Horgan's death; and be it further

Resolved; That this memorial be spread upon the records of our association and that an engrossed copy thereof be sent to Mr. Horgan's family.

Mr. Felton: As a coworker of Mr. Horgan for a period of years, I respectfully present this resolution for your consideration.

F. P. Cheesman: I move its adoption.

(The motion was seconded and carried with a rising vote.)

Roy B. Robinette

H. S. Felton: Whereas, Death has removed from among us, our beloved friend and fellow-member, Roy B. Robinette.

Resolved: That the American Paint and Varnish Manufacturers' Association in convention assembled hereby record their recognition of the irreparable loss they have suffered in Mr. Robinette's death—the loss of a beloved friend, a serviceable fellow-member, and a man whose character and lovable nature will long remain an inspiration to us all; and be it further.

Resolved: That a copy of this memorial be spread upon the permanent records of the association and an engrossed copy thereof be sent to Mrs. Robinette.

Mr. Felton: I respectfully move the adoption of this resolution.

(The motion was seconded by Mr. Cheesman and carried with a rising vote.)

President Kurfees: Any new business? Has anyone any new business to present before we adjourn?

This afternoon at two o'clock, the meeting of the National Paint, Oil and Varnish Association, remember that, and this meeting is adjourned subject to call.

(The meeting adjourned at one-thirty o'clock.)

Tuesday, October 31

Second Session, Tuesday Forenoon

(The meeting was convened at 10:30 a.m., October 31, James F. Kurfees, president, presiding.)

President Kurfees: This is a called meeting of the American Paint and Varnish Manufacturers Association.

The first order of business will be a report from Mr. Roh.

Charles J. Roh: Do you want me to read the two pages of the resolutions that you already know and which I read yesterday? The substance of them is that we authorize the officers of the association to dissolve the American Paint and Varnish Manufacturers Association and, if and when the N. P. O. & V. A. authorizes similar dissolution, we join with it in a new association. I will be very glad to read them to you if you want me to.

("No" from the members.)

Mr. Roh: I offer the resolutions which I have just explained to the convention for adoption.

F. F. Whittam: Second the motion.

President Kurfees: It has been moved and seconded and I will ask for a rising vote on this question on the resolution that Mr. Roh explained.

(The members in favor of the resolution arose.)

Mr. Shannon: We have 161 votes, which includes 18 proxies, which is more than two-thirds.

Mr. Roh: So that the unfinished business of the American Paint and Varnish Manufacturers Association, Inc., may be cared for, I would like to offer the following resolution:—

Resolved: That upon the dissolution of this association, all matters pending before, and not disposed of by, the board of directors, shall be referred to the executive committee of the National Paint, Varnish and Lacquer Association for appropriate action in accordance with the constitution and by-laws of that association.

(The motion was seconded by F. P. Cheeseman.)

President Kurfees: You have heard the motion, gentlemen. All in favor of that motion make it known by saying "aye"; contrary, "no." It is so ordered.

Mr. Shannon: There is no unfinished business to come before the American meeting.

President Kurfees: It now becomes my duty to ask for a motion to adjourn the American Paint and Varnish Manufacturers Association meeting so that we may at once go into the general meeting.

Mr. Figgis: I move we adjourn.

(The motion was seconded.)

President Kurfees: It has been moved and seconded that the meeting of the American Paint and Varnish Manufacturers Association adjourn. All in favor of that motion make it known by saying "aye"; contrary "no." It is carried. We are adjourned.

(The meeting was adjourned at 10:30 a.m.)

(The following reports in a printed pamphlet were distributed to the members.)

Report on Cost Accounting

Due to the fact that no cost bureau has been in operation in our industry for several years and no sustained contact has been maintained by the association with its members through such a bureau with a view of installing costfinding systems, the number of requests for new installations, and even the number of inquiries to your committee regarding opinions, explanations and suggestions in connection with various phases of proper costfinding, has fallen to a very low ebb. It is, however, contended that a considerable portion of this inactivity can be attributed to the depressed business conditions the past four years, with its consequential program of reduced operating expenses by all members of the industry.

During such a time of depressed business conditions with volume of sales and gross profits decreasing and in many instances net losses presenting themselves at fiscal closing periods, it would seem logical that an unusual number of requests would be made by the various members of the industry for new installations and/or improvements to existing costfinding systems, general accounting methods and budgetary control routines. The fact is, however, and past experience has definitely shown that the converse is true.

During recent months, however, business conditions have somewhat improved. The National Recovery Administration with its program of minimum wages, maximum working hours and rules of fair competition is now making certain progress in establishing and approving codes for the regulation of the various industries. In connection with the paint, varnish and lacquer industry, the code of fair competition as submitted to Washington and on which several hearings have been held, is still awaiting final approval. This is expected in the near future. In the meantime, most of the members of the industry are operating under the President's general code of minimum wages and maximum working hours.

In the code of fair competition submitted to Washington by our industry, there is defined the various elements of cost in manufacturing the different products. It is the opinion of your committee, that after the submitted code is approved, it will be necessary to emphasize more than ever the adoption of uniform costfinding methods by each and every member of the industry. It is further contended that whatever uniform methods may have been recommended by your committee in the past for adoption by the industry, these will have to be revised in some respects and that certain phases of cost will have to be elaborated upon, in order that manufacturing costs may be figured more uniformly by the various members of the industry.

With this particular plan in early prospect, there is no question but what considerable work will have to be done. It may become necessary therefore to reinforce your committee by outside assistance in order to accomplish such work in the most efficient and expeditious manner.

On further reference to the code as submitted, it is noted that products of the industry shall not be sold below cost. Your committee is of the opinion that this particular provision in the code makes it incumbent upon every member of the industry to review its present standard unit process costs and revise them in order to reflect current actual costs. Due to decreasing production in recent years and now due to increased production and increased wage costs, wide fluctuations in actual costs are constantly occurring. This situation is, therefore, deserving of early attention, regardless of the type of costfinding system used and the volume of business enjoyed.

Your committee, therefore, awaits with eager interest the approval of the pending code at Washington and assures you of its desire to co-operate in the fullest extent and in the most effective manner upon the subject of uniform costfinding methods in our industry in order that all members may fully subscribe to the specific requirements within the code relating to costs.

Report on Fire Prevention

The report the committee on fire prevention makes this year is very similar to last year's report. In other words, we were satisfied to continue our watchful contact work rather than initiate or attempt to initiate any new projects.

We again wish to emphasize the fact that during the previous years, our work with insurance, municipal, and other regulatory bodies as regards ordinances, laws, and regulations, was so successful and of such complete character that nothing further has been needed since that project was consummated.

Report on Lacquer, Synthetic Gums

The work of the committee during the past year has been confined to the efforts of individual members to help change the policy of certain manufacturers of raw materials who have in the past been offering intermediate products directly to our customers. We feel that some success has attended these efforts and that the policy has in some instances been decidedly modified.

We had no question regarding fire hazards brought to our attention and so far as we know, this factor in the use of lacquers does not have the prominence that it once did.

Report on Membership

Our report of last year concluded with the following paragraph:—

"With the return of better conditions . . . we predict that our successors will be enabled, at your next meeting, to present a report of achievement rather than of explanation and defense."

It was not, however, the return of conspicuously better conditions, but the enactment of the National Industrial Recovery Act that has enabled us to verify our prediction.

The list of members admitted since your last annual meeting is as follows: —

Advance Paint Company, Indianapolis.
American Oil and Paint Company, Cleveland.
American Paint Corporation, Duluth, Minn.
American Paint and Supply Company, Dallas, Texas.
Bloomfield Chemical Company, Harrison, N. J.
Boatwright Paint and Varnish Works, Atlanta.
Borden and Remington Company, Fall River, Mass.
Frank Bownes Company, Chelsea, Mass.
Carpenter-Morton Company, Boston.
John P. Cochran Company, Cleveland.
Collins-Davoust Paint Manufacturing Company, Dallas, Texas.
C. H. Dragert Company, Brooklyn.
Eagle Paint Works, Detroit.
Finishing Specialties and Service Company, Chicago.
Benjamin Foster Company, Philadelphia.
French-Wolf Paint Products Corporation, Bristol, Pa.
Gilman Paint and Varnish Company, Chattanooga.
Headquarters Paint and Varnish Works, Brooklyn.
Julian Hilborn, Chicago.
Hockaday, Inc., Chicago.
A. C. Horn Company, Long Island City, N. Y.
India Paint and Lacquer Company, Los Angeles.
Indianapolis Paint and Color Company, Indianapolis.
Intercoastal Paint Corporation, East St. Louis, Ill.
Jamestown Wood Finishing Company, Jamestown, N. Y.
Kay and Ess Company, Dayton, Ohio.
Klinger Paint Company, Cedar Rapids, Iowa.
Knox and Morse Company, Boston.
Lilly Varnish Company, Indianapolis.
Magic City Paint and Varnish Company, Birmingham, Ala.
Moline Paint Manufacturing Company, Moline, Ill.
Mountain Varnish and Color Works, Toledo, Ohio.
Oxford Varnish Corporation, Detroit.
Parco Products, Inc., New York.
Patterson-Sargent Company, Cleveland.

Perry Paint and Glass Company, Tampa, Fla.
Piedmont Paint Manufacturing Company, Greenville, S. C.
Roach Paint Company, Dallas, Texas.
Sahlin Color Company, Camden, N. J.
Harry G. Sargent Paint Company, Indianapolis.
Schorn Paint Manufacturing Company, Seattle.
Edward J. Shannon Company, Cincinnati.
L. Sonneborn Sons Company, New York.
Southern Paint Products Company, Atlanta.
Southern Varnish Corporation, Roanoke.
Speed-O-Lac Products Corporation, Minneapolis.
Gilbert Spraunce Company, Philadelphia.
Tripod Paints, Inc., Atlanta.
Watson-Standard Company, Pittsburgh.
Warren Company, Atlanta.
Yarnall Paint Company, Philadelphia.
Yoder & Gordon, Inc., Norfolk, Va.
Zapon Company, Stamford, Conn.

And, because of the extent and vigor of the canvass, it is highly probable that there will be numerous additions after the printing of this report.

Your chairman wishes to record his grateful appreciation of the enthusiastic help of his fellow-committeemen, without which such a showing would have been impossible. Immediately after the passage of the recovery act it became apparent that our committee was too small and too scattered to cover the field. Your chairman, then, with the consent of the association authorities, proceeded to enlist others to assist in the work as follows:—

John Cleage, jr., Magic City Paint and Varnish Company, Birmingham, Ala.
H. Braith Davis, H. B. Davis Paint Company, Baltimore.
L. H. Ferguson, American Paint and Supply Company, Dallas, Texas.
M. G. Heins, True-Tagg Paint Company, Memphis, Tenn.
C. D. Horton, Moline Paint Manufacturing Company, Moline, Ill.
William H. Jarden, jr., McCloskey Varnish Company, Philadelphia.
O. B. Pennington, India Paint and Lacquer Company, Los Angeles.
William Richter, E. I. duPont de Nemours & Co., Wilmington, Del.
William H. DeCamp, Murphy Varnish Company, Newark, N. J.

These additional appointees—Mr. Jarden, in particular, because of his wide acquaintance and friendly relations with manufacturers from coast to coast—have been exceedingly helpful; while Mr. Trigg, as chairman of the code committee, has rendered inestimable service to the committee, both through his personal influence and through friendly advice to your chairman.

But the work gratifying as the results must be, is only started. The association, as the central authority of the entire industry, with all the principles it has advocated and maintained during the past thirty-four years now enacted into law, is now the home as well as the official mouthpiece of every paint, varnish or lacquer manufacturer, large or small, in the United States. It is, therefore, obviously to the personal advantage of every one of them to join the association and participate in the great work before us, rather than to remain outside, subject to its jurisdiction.

A conservative estimate indicates that there are in the United States about 1,000 manufacturers making and selling paints, varnishes and lacquers, with perhaps an additional five hundred, making them for use on their own products.

The membership of the association is now 236. It is also estimated that the members of the association produce 75 percent to 80 percent of the total annual output. It is, therefore, largely from the numerous group of the smaller manufacturers that future growth must come, and to a disinterested outsider it would seem that, without awaiting an invitation, these, from motives of self-interest if from no other, would be eager to enroll themselves.

In our work, however, we have been impressed with the fact that many who realize the desirability of membership are restrained by motives of rigid economy in expenditures. It was for this reason that, early in our campaign, we requested the board of directors, first, the suspension of the initiation fee; second, waiver of the semiannual dues for the last two months of the fiscal year, and third, a reduction of the annual dues for those qualifying under the first three brackets of the by-law. All of these suggestions the Board promptly accepted, subject, of course, to approval of the association at this annual meeting; and we confidently hope that whatever changes may be made in the structure of the organization these three recommendations of the board will be confirmed.

This is the report of our stewardship. We have done our best in a difficult and confused situation, and wish for our successors the complete success which we have failed to attain.

Report on Tung Oil

According to the latest figures available, the imports of tung oil from China have shown a marked increase during 1933 over 1932. Over 60,000,000 pounds were imported in the first six months of 1933, as compared with about forty-four million pounds in the same period of 1932. The price of the oil has also risen from about 5 cents a pound to about 7 cents a pound.

The plantings of tung oil trees in this country are being maintained and extended, as it is believed that tung oil offers an opportunity for the utilization of lands which have been idle or from which unprofitable crops of other kinds have been produced in the past. Considerable progress has been made during the past year in improved cultural methods, such as the budding of desirable stock on trees that have indicated unsatisfactory yields. One of the outstanding developments has been the cure of "bronzing" which affected many trees in Florida. After several years of experiment, it has been found that the application of zinc sulphate to the soil around affected trees has produced a marked improvement. It is believed that the extension of this treatment will restore considerable acreages of poorly developed trees.

This year has been a favorable one for the production of tung oil seed, and it is expected that a large crop will be available in November.

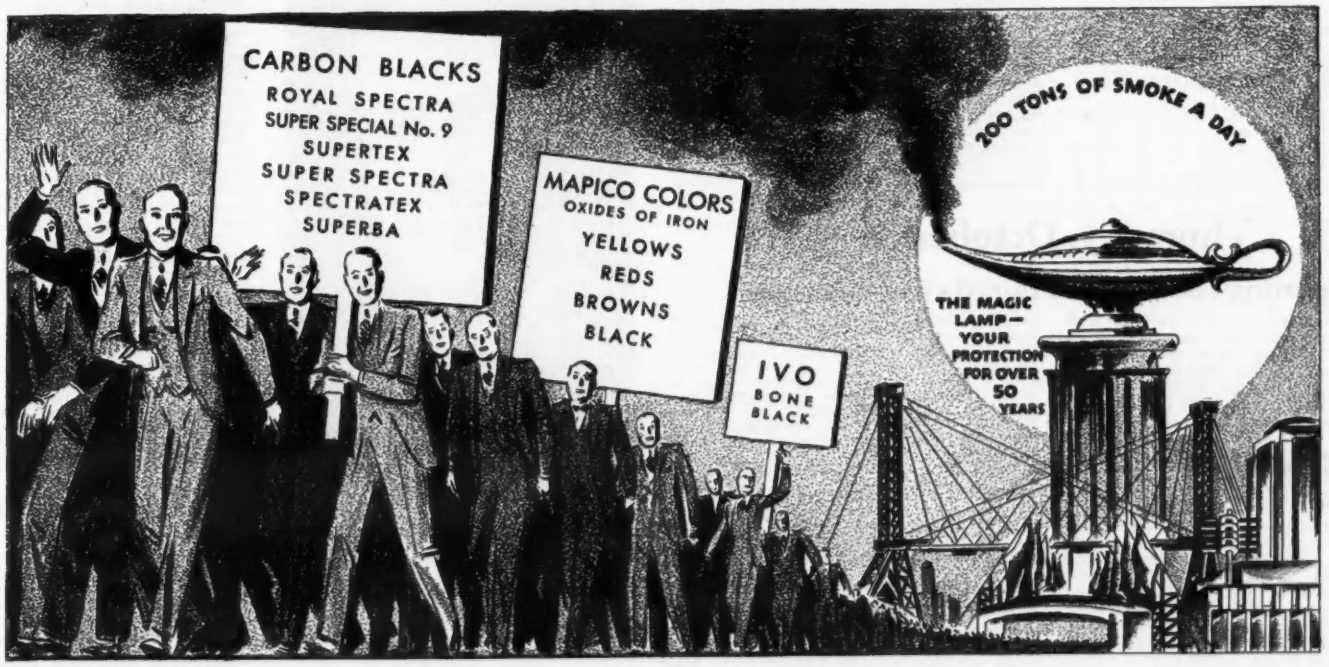
Through the American Tung Oil Corporation, your committee has continued to disseminate information on tung oil production to prospective planters in the United States and foreign countries. Several thousand copies of the booklet, "Questions and Answers on Tung Oil Production in America," have been distributed, and substantial quantities of seed for planting purposes have been supplied. In late years, most of this seed has been shipped abroad. Orders for further quantities from this year's crop are already in hand.

Report on Returned Goods

The present special committee on returned goods was appointed in the spring of this year and proceeded to carefully consider the report of the last special committee appointed the previous year and to formulate plans and recommendations for the elimination of the returned goods evil.

The general consensus of opinion expressed by committee members was to the effect that since the report of the previous committee the returned goods evil had grown considerably in magnitude and definite steps should be taken by the industry to eliminate this condition insofar as possible. To this end a new program was formulated and it was the intention of the committee to broadcast the provisions of the recommended program to the members of the industry prior to the convention in order that the members could intelligently consider and act upon these recommendations at the time of the convention.

Just prior to the preparation of an informatory bulletin to the industry on this subject, the association headquarters communicated with the committee and suggested that the committee's recommendations be submitted to the general code committee of the industry for inclusion in the paint code. This was done, and as result, the recommendations of the special committee on returned goods were included in the general paint code under the caption of "Returned Goods."



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PROCEEDINGS OF THE

Federation of Paint and Varnish Production Clubs

TWELFTH ANNUAL MEETING

Chicago, Ill., October 26 to 28, 1933

With an attendance of almost two to one over last year, the Federation of Paint and Varnish Production Clubs met in its twelfth annual convention in the Edgewater Beach Hotel, Chicago, October 26 to 28, E. E. Sparrow, president, being in the chair.

This was the federation's first three-day convention, and the additional time was welcomed by the delegates as it gave ample opportunity for discussion, not only of the technical papers, but of the countless problems that arise in plants and laboratories. Keen interest was shown in the impending code of fair competition for the paint, varnish, and lacquer manufacturing industry and in the prospect of an amalgamation of the two major trade associations of the industry. Ernest T. Trigg, chairman of the code committee, was present and explained how the code was evolved.

New Officers

These officers were elected for the coming year:—

President, F. C. Atwood, of the Atlantic Gypsum Products Company, Boston.

Vice-president, Roy B. Anderson, of the Brooklyn Varnish Company, Brooklyn, N. Y.

Secretary, George B. Heckel, Philadelphia.

Treasurer, R. C. Stark, of Pratt & Lambert, Inc., Buffalo.

Members of the executive committee, Clarence W. Clark, of E. I. du Pont de Nemours & Co., Everett, Mass.; George Sutherland, of the H. B. Davis Company, Baltimore; and P. S. Eddy, of the Porter Paint Company, Louisville.

The new officers were installed at the banquet October 27, and on the following morning Mr. Atwood, the new president, who has been chairman of the plant managers committee, presided at a half-day session which was in the nature of a round-table discussion of production and management problems and of points in the industry code which has been in the process of preparation since early in June. It was the feeling of Mr. Trigg, of Mr. Sparrow, and of Mr. Atwood that members of the federation, by virtue of their positions in their respective committees, should and would take a responsible part in working out the terms of the code successfully.

The second Paint Industries Show was held in the convention hall, and achieved even greater success than the initial show at the Mayflower Hotel in Washington last year, when seventeen exhibitors presented their products. There were thirty-one this year, and Clarence W. Clark, chairman of the committee, reported advance bookings already for space at the 1934 meeting. The show was open from eight in the morning until nine at night on each of the three days and was well attended, especially on Saturday afternoon, when football games and the fair were offering competition.

Thursday, October 26

Opening Session, Thursday Forenoon

Long before the official rollcall and formal opening of the convention at 9:30 a. m. October 26, it was evident from the line at the registration desk and from the groups inspecting the Paint Industries Show that the attendance record for the federation would be broken. The total at Washington last year was 136, and by noon of the first day in Chicago there were 230 registrations, this number going beyond 250 before the end of the day.

E. E. Sparrow, of the Imperial Varnish & Color Works, Toronto, president of the federation, welcomed the delegates and gave his annual address, in the course of which he predicted an increasing strength and growing sphere of usefulness for the federation and its constituent clubs. Mr. Sparrow's address is as follows:—

Address of the President

In commencing our twelfth annual convention, I would have you know that I am proud to be here as your presiding officer. On behalf of the executives and committees I welcome you to this annual gathering.

This year, like those that have preceded, has been very successful. We have been successful in more ways than one and you will learn of this as our officers and committee chairmen report this morning. Summing up the work accomplished, I can say that at no time in our history have we been in a better position to accept greater responsibility and to be of real and vital use to our industry.

Years ago when our by-laws were drafted some one inserted this clause in the objects:—

"The object of the Federation shall be the formation of an organization which could act in all matters pertaining to the technical work of the industry, and thus be in an advisory capacity on these matters to the American Paint and Varnish Manufacturers' Association."

You will be glad to know that at least fifteen federation members were appointed to the committees of the American Paint and Varnish Manufacturers' Association this year.

Will Accept Responsibility

To my mind, these appointments mark the beginning of a new era for our federation. As it is true of an individual paint and varnish firm, so is it true of the associations organized within the industry—an efficient selling program is dependent on the quality and quantity of production. The federation representing as it does those individuals directly responsible for production must and will accept an ever-increasing responsibility within our industry.

Next week in this hotel we believe will be brought about some drastic changes in the organization of the American Paint and Varnish Manufacturers' Association and the National Paint, Oil and Varnish Association. We find ourselves splendidly organized to act in all matters pertaining to the technical work on production methods and to be available in an advisory capacity on these matters to the organization that develops as a result of next week's deliberations.

We are also not unmindful of the splendid opportunity of assisting this organization in the development of whatever code is eventually developed under the NRA.

Our financial structure has been proven during the last several years to be thoroughly sound. You will recall, of course, that we are operating entirely as a separate organization and receive not one penny of financial assistance from outside our immediate ranks. To say the least, our present income is extremely gratifying.

Your advisory committee met in Philadelphia early this year and will again convene this evening. We have found that the advisory committee has a definite function in our organization and we strongly urge that at least two meetings be held annually.

You will have noticed that we have again been succesful in having copies of our convention papers available for distribution. This year, besides the copies distributed here, every member of the federation will be sent a copy after the convention. We are indebted to Dr. Gardner and George Priest, jr., for this feature.

Our Paint Industries Show held for the first time last year proved such a successful experiment that we tried a second time. The fact that we did not have sufficient spaces available for all those desiring to exhibit gives you some idea of the success of this project.

Third Day An Innovation

An innovation this year is our Saturday morning session. Heretofore we have convened for two days only, but it was felt that there was not sufficient time for round table discussion of the more practical production problems. The plant managers' committee was instructed to take charge of this extra half day session and develop if possible the idea so that it becomes an annual occurrence. Your executives are strongly inclined towards the thought that many of uor problems would be beneficially introduced at this meeting and we request that you come prepared for a real two hours of round table discussion.

It is quite apparent that much of our activity has not been mentioned in this report. I have purposely refrained from duplicating in any way the reports of our officers and committee chairmen. They are the ones who have actually done the work and each and every one of them has contributed greatly to our success. I wish to express to them my sincere gratitude for their exceptionally loyal support and co-operation.

Actually, I have only one message for you which, stated briefly, is this:—By reason of much hard work in the past this federation has developed a prestige of which we may well be proud. By reason of much hard work on our part in the future, this federation will develop an importance beyond our fondest hopes.

Secretary's Report

George B. Heckel, secretary, in his report, showed a membership total of 890, compared with the same number a year ago and 749 two years ago. This year's figures by categories are slightly changed, there being now 765 club members, against 785 in 1932; 60 associate members, compared with 64 in 1932; and 65 subscribing members, against 41 a year ago. Included in the latter class are fifteen foreign subscribing members, a gain of two in the year.

In speaking of the advisory committee's work in its February meeting, the secretary stated that "the privilege of the trade papers of our industry were more closely defined and greatly

E. E. Sparrow
The Presiding Officer

liberalized in accord with their wishes to our mutual benefit, and the press has uniformly responded by advancing our interests in every practicable way."

Mr. Heckel spoke of the advisory committee's endorsement of the New York club's resolution against the practice of certain raw material interests in furnishing technical data to dealers and others, and added that the Golden Gate Club had recently adopted a series of resolutions strongly deprecating similar activities of certain manufacturers of synthetic resins in the varnish and lacquer field.

The secretary also declared that under the new set-up of the paint, varnish and lacquer industry, the federation will have a definite and important place.

Treasurer's Report

Roy B. Anderson, of the Brooklyn Varnish Company, treasurer, reported an increase of $400 in cash assets over 1932 and a generally healthy financial set-up. The convention is self-supporting, he said, while the Paint Industries Show had shown a small operating profit.

Plant Manager's Report

Francis C. Atwood, chairman of the plant managers' committee, after giving his report in the form in which he proposed to present it to the convention of the American Paint and Varnish Manufacturers Association, introduced Ernest T. Trigg, president of John Lucas & Co., chairman of the Educational Bureau of the Paint and Varnish Industry and also chairman of the industry's special NRA code committee. Mr. Trigg explained briefly the set-up of the new association proposed as successor to the two existing associations. He also elucidated various sections of the code as it had been submitted in Washington. After Mr. Trigg's address, the federation convention voted approval of the text of Mr. Atwood's report.

In this report, which is published as a part of the record of the manufacturers convention elsewhere in this issue of the REPORTER, Mr. Atwood spoke of the composition of the federation, of its financial independence at this time, of the need for carefully restricting active membership to actual production and technical men, of the Paint Industries Show and its success, and finally he dealt with the situation of the production and technical men in the industry as it was being reshaped under NRA.

Expressing regret that no representative of the federation had been appointed to a place on the industry's code committee, Mr. Atwood pointed out that the members are "in most cases responsible for carrying out those parts of the code of the industry having to do with labor. . . . Satisfactory co-operation with labor is of utmost importance in the critical months ahead. The federation members by their close association with and control of the details of labor problems stand ready to keep clear the Paint Industry's record on this score."

Calling attention to the sacrifices which federation members have made as individual employees in the last few years, Mr. Atwood expressed the hope that the average technician would not find himself "in the ranks of the Forgotten Man"; and he scored the policy of certain raw material men who in "their zeal to get business may be offering information or services which will jeopardize the production man's job. The manufacturer cannot afford to be without the services of competent technical and production men."

Mr. Atwood concluded:—

If, as seems likely, a single comprehensive trade organization is deemed necessary to meet the needs of NIRA, it would appear that the federation can function with increasing effectiveness. First, it can continue to care for the needs and rights of its members as individual technical men. Further, if your manufacturers' organization loses its identity, the federation whose interests as manufacturers coincide with yours, stands ready, able, and willing to serve our community of interests.

E. T. Trigg's Address

In his informal talk, Mr. Trigg immediately emphasized the fact that, under the new set-up, the association would be pre-eminently a manufacturers' organization, with which, he felt, every manufacturer in the country should insist on affiliating. There were far more problems to be faced than those indicated in the code of fair competition, and he declared that, regardless of the code and its formal duration, the country was literally in for a new deal. New trails must be blazed to a greater industry, he said.

Mr. Trigg quickly outlined the main topics of the code for the paint, varnish, and lacquer manufacturing industry, and he urged all to work hard in cooperation with the administration, to assure employment and increase purchasing power.

Many questions asked from the floor showed a vital concern with the overlapping possibilities of codes, as, for example, where a firm will find itself operating under both the paint and oil code. A number of the plant managers indicated intention of remaining over for the manufacturers' convention.

Mr. Trigg was assured by Mr. Sparrow that he and his code workers would have the utmost co-operation from the federation, which as an organization would assume full responsibility for new tasks given its members to do under the new deal. An enthusiastic vote of thanks was given to Mr. Trigg.

The rest of the morning was devoted to brief situation reports by representatives of constituents clubs and to committee reports.

Report on Memorials

Mr. Heckel read the report of W. P. Werner, chairman of the memorials committee, calling for commemorative resolutions for the following:—

Robert Erskine, of the John T. Lewis & Bros. Company, member of the Philadelphia club.

F. H. Morris, of the Pierce & Stevens Company, member of the Western New York club.

Ross Innes, former president of the Toronto club and superintendent of the Flint Paint & Varnish Company.

Report on Dry Colors

A. E. Stauderman, chairman of the dry color committee composed of S. Bonine, E. W. Fasig, A. F. Brown, F. P. Ingalls and L. M. Larson, submitted a follow-up on last year's report which called for adoption of standard specification. This year's report is as follows:—

Two years ago the dry color committee of the Federation concerned itself with the preparation of a standard method for the testing of dry color shipments, that could be used by both producer and consumer to their mutual advantage.

The objectives set at that time were as follows:—

1. To prepare a stadard method that would be practical, definite and accurate.
2. To present such a method to the entire paint industry through the local clubs of the Federation and to the dry-color industry through its association, inviting criticism and suggestions.
3. If proposed method is found to be acceptable to the paint industry, to present it in the form of a specification at a Federation meeting requesting its adoption.
4. To endeavor to secure its adoption by the dry-color industry.
5. To propose the method, if adopted, to the A. S. T. M. for their consideration.

The progress made by the committee has been as follows:—

1. A standard method for the testing of dry-color shipments was drawn up and presented to the paint and dry-color industries and found acceptable.
2. Proposed specification present to and adopted by the Federation at the 1932 Washington Convention.
3. Adoption of the specification by the dry-color association followed immediately.
4. Federation specification given wide publicity in all trade magazines, both here and abroad.
5. Observations made during the first year of the specification have indicated that method is in general use by both maker and consumer.
6. A few recommendations for elaboration of certain details have been received from the trade. These suggestions will be considered.
7. Subcommittee VIII of committee D-1, A. S. T. M., now have the Federation specification under consideration. We understand that that committee will propose our method for adoption, excepting that portion referring to white pigments. There is a tentative method of test for tinting strength of white pigments, D-31 T, now in their files. It is the desire of this dry-color committee, however, to work with the A. S. T. M. to avoid the possibility of two large organizations recommending different methods of testing pigments.

Report on Golf Trophy

Mr. Heckel also submitted a report for the Toronto golf trophy committee, showing that the Northwestern club takes the cup from Toronto, competition having been resumed this year. The club members are Sorensen, Macmahon, Monran, Hough, Jr., Hardcastle, and Johnson. Their total was 597; Sorensen had low gross of 86.

Report on Exposure Test

The exposure test committee was composed of V. C. Bidlack, chairman, J. A. Frederickson, F. G. Oswald, C. Rose, F. C. Schmutz and S. Werthan. Its report follows:

This committee was appointed by your president to carry out the Plant Managers' recommendations, accepted by the Federation last November, that the code developed by the New York Club for designating and evaluating exposure tests on paint, varnish and lacquer coatings be put in a form suitable to serve as the official code of the Federation.

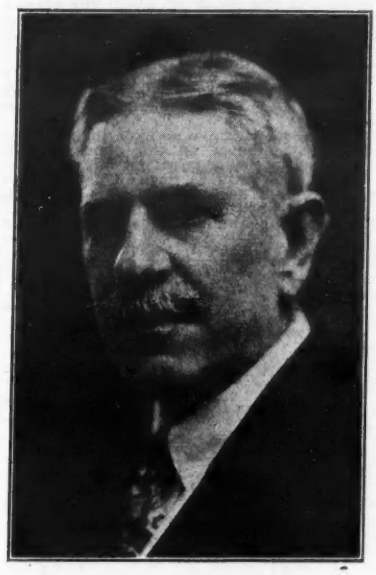
The committee has limited its activities to the designation and evaluation of failures without attempting to expand the code to include methods for making exposures. Since certain information describing an exposure test is necessary for an intelligent consideration of the results, such information is called for as part of the code.

Since an official code should be applicable to the evaluation of all types of finishing materials, the designations of failures have been made sufficiently general to be applicable to all cases such as, exterior house paints, metal protective paints, enamels, lacquers, varnishes, interior finishes, water paints, etc. Due to the scope of the work and the limited time available, it was realized that it would not be possible to complete the entire code this year. For this reason the terms considered were limited to those necessary for the evaluation of exterior house paints. It is the committee's intention to expand on these so that the code eventually include all terms necessary for evaluating exposures of the various types of finishing material. The original code of the New York Club has been followed quite closely. In certain cases it may be necessary to make a special note of other types of failures, as washing, wrinkling, etc. Usage will disclose what expansion will be desirable.

In arriving at methods and terms for expressing degrees of failure it was realized that any scale suitable for general use must serve those interested only in pronounced changes as well as those interested in the more minute trends. Since two systems (descriptive words and numerical ratings) are in common use and both possess merit, both system are included in the code.

The evaluation of a failure can be based on the original condition of the coating or expressed in terms of a fixed set of standards. In grading the color of a white paint, its original color or pure white can be used as the base for comparison. In evaluating gloss the original gloss of the coating or a perfect gloss surface can be considered the standard. Similarly, the evaluation of other properties can be based on the original coating or on independent standards. The need of suitable comparison methods and accurate standards is quite evident, especially if independent scales of comparison are to be used. Methods and standards for certain properties are available. There are the Munsell color standards which may be used to define the color and brightness of any surface. A small, simple, circular scale covering brightnesses from white to black is available for evaluating the color of white surfaces. Last year the Detroit Club proposed a method and standards for measuring gloss. The committee favors the use of fixed scales and the adoption of standards for grading the various failures as rapidly as reliable practical standards become available.

Because of the increased use of graphical methods for recording failures and the advantages of a standard form for the presentation of data such a form



George B. Heckel
Re-elected Secretary

has been included as part of the code. It has been the aim of the committee to make the form suitable for general usage, within any one organization as well as between different laboratories. Space is provided on the record form for information which is frequently considered confidential. On the other hand, to assure the presentation in any report for publication of sufficient exposure information to permit intelligent interpretation of results, the items of information that must be included are definietly designated in the code.

Since the merits and weaknesses of any code are revealed through usage, it is recommended that the code be adopted tentatively as the Official Code of the Federation and that it be used in all papers presented before or by the Federation or its constituent clubs. The use of the code during the coming year will reveal desirable additions and modifications, which should permit its final adoption as the official code at our next annual convention.

Official Code of the Federation of Paint and Varnish Production Clubs for Designating and Evaluating Exposure Tests on Paint, Varnish and Lacquer Coatings

This code consists of four parts, that is, a description of the test, methods for designating the degree of failure, definitions of the various types of failures and a form for recording the data.

Description of the Test

For the intelligent consideration of exposure tests, it is necessary that certain descriptive data covering the preparation of the test surfaces, the application of the paints and the nature and conditions of the exposures be available. The Exposure Record form provides for such information, together with formulation and other data. The following information should be included in a report of exposure tests.

(1) Date and length of exposure.
(2) Location of exposure. Designate both the geographic location and the atmospheric conditions.
(3) Type of Exposure. Designate whether a single board, a panel, a building, etc.
(4) Direction of exposure. Designate whether facing North, South, etc., and the angle.
(5) Material painted. A detailed designation of the kind of material, such as Edge grain white pine, black sheet iron, etc.
(6) Condition and preparation of surface. Designate whether new or previously painted surface and treatment, such as burning, shellacking of knots, wire brushing, etc.
(7) Protection of back of surface.
(8) Application and reduction of paint and drying conditions. Designate method of application (brush, spray, etc.) number of coats, the reduction for the various coats, application date of each coat, and weather conditions during application and drying periods.

Designation of Degree of Failure

The designation of degrees of failure is limited to two systems—(1) a descriptive term system, and (2) a numerical rating system. The values given under one system are interpretable in terms of the other.

(1) Descriptive term system. Five degrees are given. To properly designate these degrees for all types of failure two sets of forms are necessary. For two sets of terms are conceivable.

For appearance, color and gloss:—Perfect, good, intermediate, poor and poorest degree conceivable.

For film failures:—Absence of failure, slight failure, intermediate failure, bad failure and complete failure.

(2) Numerical system. A scale reading from 10 to 0 is used in this system. Ten indicates perfection or absence of the failure, while zero represents the poorest degree conceivable or complete failure.

The correlation of the two scales is:—Ten, perfect or absence of failure; nine, eight, seven, good or slight failure; six, five, four, intermediate or intermediate failure; three, two, one, poor or bad failure; zero, poorest degree conceivable or complete failure.

Paint Failures

An observer approaching a painted surface will be impressed by its most apparent properties before his inspections become detailed. His first impression will signify to him the general appearance of the panel.

General appearance is the complete impression conveyed when the painted surface is viewed at a distance of not less than ten feet before any detailed inspection has been made and is measured purely in terms of satisfactory or unsatisfactory appeal to the observer.

Terms applicable to the detailed inspection and ratings of painted surfaces follow:—

Color (white surfaces) is the designation of a comparison of the whiteness of the surface under consideration with that of an ideal white surface.

This comparison includes changes due to yellowing, darkening, mottling, dirt collection, mould growth, etc. If the change is specifically due to one or more of these factors, the cause or causes should be recorded.

Color (other than white surfaces) is the designation of the change in the spectral characteristics (color) from that of the original surface.

This comparison includes changes, in addition to fading, due to yellowing, darkening, mottling, dirt collection, mould growth, etc. If the change is specifically due to one or more of these factors the cause or causes should be recorded.

Gloss is the property that makes possible a description as mirror-like, flat or some intermediate degree of lustre. The determination should be made without any preliminary washing, polishing or other modification of the surface.

Chalking is manifested by the presence of a loose powder, evolved from the film itself, at or just beneath the surface.

Chalking is manifested by the presence of a loose powder, evolved from the film itself, at or just beneath the surface.

Checking is manifested by breaks in the film, which do not extend entirely through the finish under consideration. Usually evaluation of this failure may be limited to what can be seen by the unaided eye. In cases of special precision it is recommended that the microscope at ten magnifications be used to detect and evaluate incipient checking. In such cases the designation of checking should be prefixed by the term "microscopic."

Cracking is manifested by breaks extending through the finish under consideration.

In cases where it is difficult to determine whether the breaks actually extend through the finish, it is recommended that the microscope be used to differentiate between checks and cracks.

Flaking is the detachment of small pieces of film without exposing the surface to which the finish under consideration was applied.

Blistering is manifested by the detaching and raising of unbroken areas of the finish from the underlying surface.

Peeling is manifested by a pulling away or falling away of large areas of film from the surface to which the finish under consideration was applied.

The loosened portions of film may or may not be entirely detached from the main body of the coating.

Second Session, Thursday Afternoon

The only business transacted on the first afternoon was the report of the nominating committee and the unanimous election of the slate as presented. The committee was composed of all past presidents in attendance, who met at lunch. James E. Kortum, who preceded Mr. Sparrow, read the report.

J. F. McMenamin, as chairman of the program committee, took the chair during the presentation of the original papers and conducted the discussions following the reading of each.

Baltimore Club Paper

The first paper on the afternoon program was that of the Baltimore Paint and Varnish Production Club. It was presented by George Sutherland as follows:—

Buhrstone Mill Dressing

Now that buhrstone mills have been largely replaced in the flour and feed industry by other types of equipment, skilled stone dressers are no longer available for this work. In the paint industry, the hand pick has largely been discarded for the carborundum wheel operated by a flexible shaft driven by an electric motor. This shaft travels at a high rate of speed and it is, therefore, difficult to dress out the cracks to an even depth and with sharp edges. These considerations led the Baltimore Paint and Varnish Production Club to develop a device for use with the flexible shaft machine with which a better dress could be obtained even with comparatively inexperienced operators. This device is illustrated in the latter part of this paper, and a model is on exhibition in the Baltimore production club's booth at the Paint Industries Show.

Before proceeding to a description of this device we feel that some discussion of the principles of mill dressing is in order. At the Atlantic City meeting of the federation, in 1927, Mr. Sparrow presented a paper for the Toronto club covering admirably some aspects of mill grinding. We refer you to his paper covering the subject of increase in speed of rotation of the mill, increase in number of drifts, and tension between the stones.

The flat or so-called "buhrstone" mill consists of two flat circular stones, mounted one over the other. The top stone has a circular opening in the center called the eye, through which material

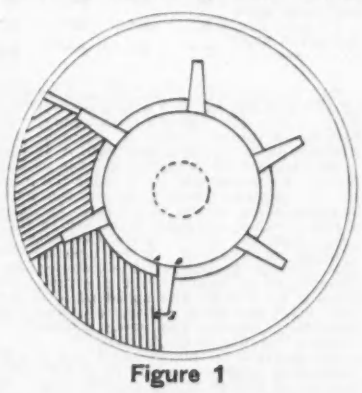


Figure 1

is fed into the stones. This stone is fastened to the mill frame and does not rotate. The lower stone usually rests on a rocker or sort of universal joint mounted on a vertical shaft. This shaft can be raised by means of a lighter bar and thus the lower stone brought into contact with the upper. The direction of rotation of the lower stone is clockwise.

In order that maximum grinding surface be obtained the two stones must be absolutely plane. Due to unequal wear in service, high spots develop which must be dressed out before proceeding to redress the cracks and furrows. No really adequate method has been developed. The usual practice is to rub a straight edge, smeared with prussian blue in oil, over the surface. The high spots are dressed down with a hand pick or wide grinding wheel and the process repeated until no more high spots appear. The use of the circular grinding wheel, however, tends to gouge out depressions. We have found the use of the cup wheel with the flat side held against the stone to be useful in preventing this. We believe that this problem is worthy of further study and are still engaged in the development of a suitable tool for this work, on which we hope to report at a later meeting.

To feed the paste out between the stones a number of wedge-shaped grooves called furrows are cut in the surface of the stone. The deep side of the furrow, AC in Figure 2, is tangent to a small circle called the crack, the center of which is the center of the stone. A in Figure 2 is the deep point in the furrow. Edges BD and CD are in the plane of the surface of the stone. Both stones are dressed in the same way. When the top stone is inverted over the bottom, the furrows cross at an angle dependent on the di-

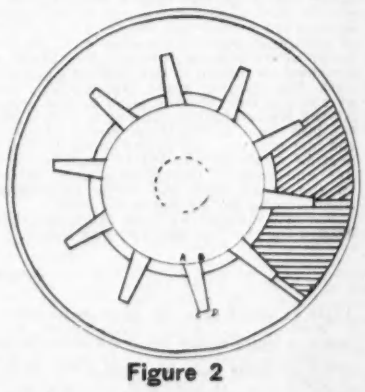


Figure 2

ameter of the draft circle for reasons which will be explained later. As the lower stone rotates, the edge BD passes over the deep edge AC on the upper stone and moves out to the edge BD. In doing so, the paste in the furrows is rolled over, mixed and some of it forced out into the surface of the stone.

Influence of Furrow Depth

There is considerable difference in the practice of dressing furrows. In some factories the edges AC and BD are parallel, in some cases the furrows are made triangular, that is, would be represented by ABC. There is considerable difference in opinion on the width of the furrows. Some contend that these should be 2 inches wide for 20-inch, 26-inch and 30-inch stones; some that they should be 1½ inches wide for the 20-inch and wider for stones of larger diameter. We believe that for a 20-inch stone the furrow should be 1¼ inches wide at AB and ¾ inch at CD; for 30-inch stones, 2¼ inches wide at AB and 1¼ inches at CD. The wider furrows take up too much space which should be given to cracks. A far more important question is how far the furrows should be dressed out to within 1 to 1½ inches of the outside edge of the stone. Our belief is that this distance should not be less than 2½ inches for the 20-inch stone and still further for stones of larger diameter, where the increased length of the furrows and their increased

number give sufficient feed to the cracks.

The depth of the furrow at A depends on the consistency of the pastes the depth may be ½ inch but for thinner mixes should be shallower. In fact, in some factories on those mills intended for grinding thin enamel mixes, the furrows on the bottom stone are omitted entirely and those on the top stone are not over ¼ inch deep. The contention is that no mixing and rolling action is performed in the furrows since the mix is too thin and that deeper furrows and furrows on the lower stone serve to pocket material which remains unground at the end of the operation. We believe this contention to be correct.

We now come to consideration of the effect that varying the number of furrows has on output and fineness of grind. As mentioned above, the furrows are cut with the deep edge AC tangent to the draft circle. The cracks are cut parallel to this in the sector preceding it. (See Figure 1.) Since both stones are dressed exactly the same and the top stone inverted over the bottom the cracks pass over one another at an angle. A bit of paste caught between two cracks is sheared and at the same time pushed toward the outside of the stone. Let us consider figure 1, in which there are six furrows and six sectors of parallel cracks and in which the draft circle is 3 inches.

Let us consider the point at which the first crack in a sector of the bottom stone crosses the first crack in a sector of the upper stone. The point of intersection of these two cracks moves to the outside edge as the lower stone rotates in a little less than 1/6 of a rotation in the case of figure 1. In the case of figure 2 the intersection point of these same two cracks moves to the outside edge in 1/9 of a rotation. In the case of figure 3 the point of intersection moves to the outside edge in about 1/8 of a rotation. If this were the only consideration governing output, a mill dressed as in figure 2 would deliver more paste.

We must, however, consider the angle at which the cracks intersect. It seems to us that the more obtuse the angle of intersection the larger the bit of paste caught between the intersecting cracks and pushed toward the outside edge.

In figure 1 the first crack in a sector of lower stone crosses the first crack in a sector of the upper stone at the inside edge of the stone at an angle of 130°. As the lower stone rotates and the point of intersection of these cracks moves toward the outside edge of the stone this angle diminishes, becoming 62° at the outside

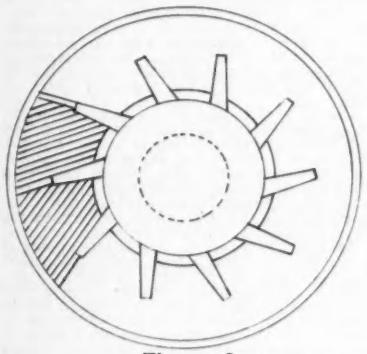


Figure 3

edge. As the lower stone rotates the angle of the intersection of the first crack of the lower stone at the inside edge becomes less at each successive crack of the upper stone until at the last crack of the sector of the upper stone it becomes 32°. As the lower stone rotates further, this point of intersection moves to the outside edge also with diminishing angle, approaching 42° at the extreme outside edge of the stone. As the lower stone continues to rotate and the last crack of the lower stone intersects the last crack of the upper stone the intersecting angle at the inside edge becomes 43° and as this intersection point moves to the outer edge the angle diminishes, approaching 22° at the outer edge.

For convenience we have tabulated these angles for the four diagrams as below.

Angle of Cracks

	20" mill		30" mill	
	Fig. 1.	Fig. 2.	Fig. 3.	Fig. 4.
Angle at inside edge 1st crack lower stone and 1st crack upper stone	130°	80°	98°	92°
Angle at outside edge 1st crack lower stone and 1st crack upper stone	62°	42°	49°	42°
Angle at inside edge 1st crack lower stone and last crack upper stone	86°	62°	82°	86°
Angle at outside edge 1st crack lower stone and last crack upper stone	42°	34°	42°	39°
Angle at inside edge last crack lower stone and last crack upper stone	43°	43°	65°	77°
Angle at outside edge last crack lower stone and last crack upper stone	22°	20°	35°	36°

Comparing figure 1 with 6 sectors and 3-inch draft circle with figure 3 with 5-inch draft circle the speed at which intersecting point in figure 1 moves to the outside is a little less than 1/6 of a rotation period of the stone, whereas in figure 3 the intersecting point moves over this same path in 1/8 of a rotation period of the stone. However, in figure 1 the angle, at the start, is greater, although it diminishes more rapidly than in figure 3. Just how this latter factor influences output we are not in a position to say, as we have no experimental evidence in support of these theories. We are inclined to believe that a mill dressed as in figure 3 will have increased output. An interesting field of investigation is opened up which we intend to pursue during the coming year.

There is one other factor which must be considered as governing output. Mr. Sparrow has shown, supported by experimental evidence, that the output of a mill was increased threefold by doubling the number of drifts. This can easily be understood, inasmuch as the total length of intersecting cracks has been very materially increased. A study of the total length of intersecting cracks and number of intersecting points indicates little difference in figures 1, 2 and 3 and, therefore, there will be little difference in output from this factor.

Fineness of Grind

What factors in mill dressing affect fineness of grind? We believe these to be, length of shear between the cracks from the point at which the paste leaves the furrow until it arrives at the outside edge of the stone, the angle of intersection of the cracks and to lesser extent the length of time the paste is between the stones, that is, the time elapsing from leaving the furrow until it reaches the outside edge. It is because of the first and third factors that we recommend not cutting the furrows so close to the outside edge of the stone. If a bit of paste caught between two intersecting cracks was sheared constantly between the same two cracks as it moved to the outside edge of the stone the length of time in the mill would be of little consequence. This is not strictly true as, in part, it is pushed out onto the "land" between the cracks, where it is subjected to a squeezing action but is not forced out toward the outer edge.

The most important factor in determining the fineness of grind, we feel, is the angle of intersection of the cracks. The more acute this angle the greater the shear. We might liken this to an attempt

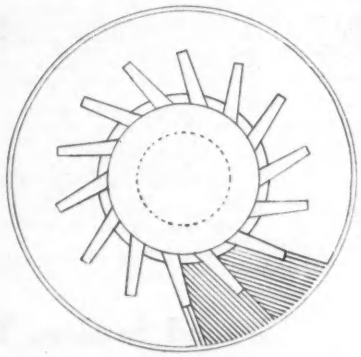


Figure 4

to cut a piece of cloth with a pair of scissors held open at a wide angle as compared with the result obtained when the scissors are almost closed.

Should the cracks be dressed out to the edge of the stone or a "skirt" be provided and, if so, how wide should it be? If a "skirt" is left it will cut down output, since there are no intersecting cracks to force material toward the outside. The wider this is the slower the output. For this enamel mixes, especially carbon black and chinese blue, this should be about ¾ inch wide. In no case do we believe the cracks should be cut to the edge in their full depth since unground material would tend to run out the ends of the cracks.

Mr. Sparrow has pointed out that the cracks should not be so narrow as to impede the corkscrew motion that occurs in them. The edges should be sharp, so that a sharp cutting action is obtained. The practice of dressing out the cracks deeper than formerly to avoid frequent redressing is, in our opinion, poor practice, since they then become pockets for unground material.

Stone-Edge Dressing

One other practice in mill dressing which we have not mentioned is to dress out the inside edge of the stone to a bevel. This is sometimes called the bosom. The idea of this is to help to feed material out between the stones. We agree that some bosom is necessary, but hardly two inches, as is recommended by some stone manufacturers. On figures 1, 2 and 3 we show a bosom of ¾ inch, which we feel is ample for this size stone.

Formerly, when mills were dressed with hand picks it was usually the practice to roughen up the land between the cracks, but since the use of the grinding wheel this has largely been neglected, with the result that the land soon wears smooth. If it is deemed desirable to have this land roughened, the use of the sand blast or of a blast of coarse carborundum might be used to accomplish this.

The comparisons of output and fineness of grind in figures 1, 2 and 3 were all for 20-inch stones. We will now compare the results obtained from a 20-inch mill dressed as in figure 2 and with a 30-inch stone dressed as in figure 4. On 30-inch stones the practice is to increase the number of furrows (and sectors), the usual number being eleven to twelve. In figure 4 this number has been increased to fourteen, and the draft circle diameter increased to 8 inches. If we assume that the correct speed for the 20-inch mill dressed as in figure 2, for a given material, is 50 R.P.M., the speed of a 30-inch mill have the same peripheral speed and, therefore, having the same tendency to "throw," would be 33 R.P.M.

In figure 3 in which we found the intersecting point occupied 1/8 of a rotation period to travel to the outside edge, this time interval on a mill running 50 R.P.M. would be 0.15 second. On figure 4, in which the intersecting point occupied 1/7 of a rotation period, this time interval on a mill running 33 R.P.M. would be 0.26 second. Since by referring to the table of angles the angles for figures 3 and 4 correspond fairly closely we should expect poorer output from figure 4 than figure 3 from these two factors. However, the number of points of intersection of cracks in figure 3 is 1,050 and in figure 4 is 2,150. Therefore, we should expect a little over twice as great an output from figure 4 as from figure 3 from this factor. Balancing this increased output from the greater number of intersecting points against the decreased speed at which the intersection point moves from the inside to the outside edge, we believe figure 4 will give somewhat better output. Since the material is sheared over a longer crack, material from figure 4 will be finer ground.

Influencing Factors

To summarize our conclusions the chief factors affecting output of a mill are number of sectors (and burrows), angle at which cracks intersect, number of intersection points of cracks (this latter is dependent on the number of cracks and their length), and as found by Mr. Sparrow the speed of rotation of the mill. The chief factors affecting fineness of grind are the angle at which the cracks intersect and the length of cracks over which the paste is sheared. Increase in the number of sectors, decreases angle at which cracks intersect which can be compensated for by increase in diameter of draft circle. Furrows should not be cut out too close to the outside edge of the stone.

We regret we have no experimental evidence in support of the above wholly mathematical considerations, but our original purpose was to develop a device to improve mill dressing. We do intend to do some work on this problem in the coming year and we hope that some of our readers may be sufficiently interested to conduct some work of their own.

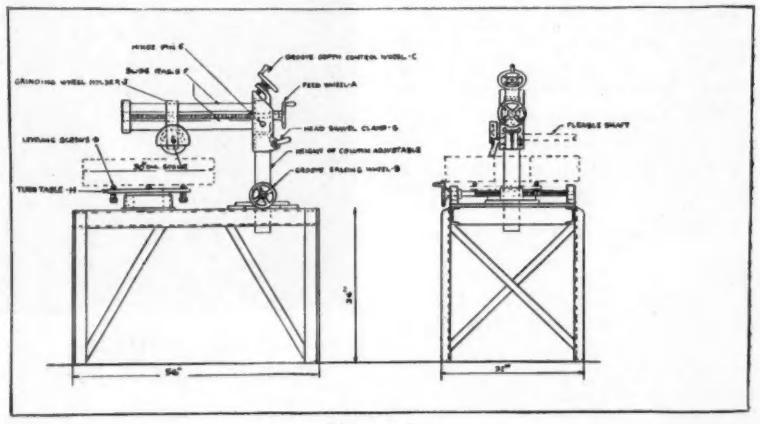


Figure 5

Buhrstone Dressing Device

To proceed to a description of our device for dressing mill stones, as mentioned above, the flexible shaft grinding machine is in general use in paint factories for dressing mill stones and it seemed desirable to try to use this equipment with our device. At first a jig which could be clamped to the stone and the wheel guided by hand along slots was thought adequate, but was later abandoned for our present device shown in figure 5, in which the wheel is held rigidly in place and forced the length of the crack by means of feed wheel A.

To briefly describe the operation of the machine, the stone is placed on turntable H and leveled up by means of leveling screws D. The stone is rotated until the first crack in a sector is parallel to the line of travel of the grinding wheel operated by worm driven by feed wheel A. The groove spacing wheel B is then operated to bring the wheel directly over the first crack in the sector to which it is parallel. The groove depth control wheel C is then operated to bring the outer edge of the grinding wheel in the plane of the stone and is then turned down sufficiently to provide the desired depth of crack. The hinge pin E provides the necessary play to accomplish this. The head is held in place by means of head swivel clamp G. The dressing is best done by withdrawing the grinding wheel holder to the inner edge of the stone and dressing outward to the skirt if one is to be provided. The groove wheel B is then operated to bring the grinding wheel over the next crack in the sector. When all the cracks in a sector are dressed out the stone must be turned on the turntable to bring the cracks in the next sector parallel to the direction of travel of the grinding wheel. The operation is then repeated as above.

Care must be taken to measure the diameter of the grinding wheel frequently and compensate for the loss through wear by turning down the groove depth control wheel C, the required amount. We feel that this machine will give parallel straight cracks of even depth and the time necessary to dress out a stone will be reduced.

Several models illustrating some of the points mentioned in this paper will be on exhibition in the booth of the Baltimore club.

Chicago Club Paper

K. J. Keating presented the paper prepared by the Chicago club. It was as follows:—

A Study of Livering and Its Prevention by the Use of Catalysts

This work consists of a general discussion of theories of livering, a description of the manufacture of eight representative varnishes and a study of their activity with zinc oxide and lithopone. The possibility of preventing the thickening by the use of small percentages of acid material is considered. In general, the results are inconclusive, although the livering is definitely retarded by some of the acids.

Discussion

It has been proposed that the undesired thickening of paint or enamels known as livering consist (a) of a soap formation characterized by greatly increased viscosity and possibly accompanied by the precipitation or coalescence of an insoluble phase, and/or (b) a condition of increased consistency caused by changed wetting relations between pigment and vehicle due to chemical action of smaller degree and generally accompanied by increased plasticity.

In general it has been considered that the soap formation is more apt to occur in varnishes of higher acid number and the changed wetting relations in varnishes of lower acid number and thus less desirable wetting characteristics.

Reference must be made to the work of P. E. Marling (1) who found much greater thickening with zinc oxide-oil mixtures containing bodied oils and polymerized and oxidized fatty acids than with mixtures in which the acidity was due to the addition of free fatty acids. In either case some soap formation was possible and it might be considered that the zinc soaps of the oxidized and polymerized fatty acids were comparatively insoluble, or that the polymerized and oxidized oils showed more of a tendency to coalescence due to instability in their colloidal nature. This article suggested that the degree of thickening was proportional to the molecular weight of the treated oil.

R. V. Williamson (2) found that the consistency of spatula mixed lithopone and zinc oxide-linseed oil pastes was dependent upon two opposing tendencies—degree of wetting and soap content. Increase in degree of wetting accompanied increasing acid number and gave the pastes a thinner consistency, whereas higher soap content increased the consistency. The increase in wetting power reached a maximum at an acid number of 5-6 and further increase in acid number did not thin the paste, on the contrary, excessive soap formation began at this point and further increase in acid number yielded considerably stiffer pastes. With similar pastes ground in a buhrstone mill he states the degree of wetting did not appreciably affect the consistency of the paste, because the energy supplied by grinding was sufficient to wet the pigment. (This scarcely agrees with practical observations.) He states that the consistency of these pastes also increases with increasing acid number, due to soap formation.

It is well known that fused soaps manufactured in the varnish kettle are only soluble in the presence of free fatty or resin acids, whereas soaps of the same metal and acid manufactured by precipitation show much greater solubility. It seems possible that soap formation in an enamel is somewhat similar to soap formation in the varnish kettle in that the presence of fatty acids is necessary to maintain solubility of the soaps formed and prevent their precipitation. This would account for the fact that gloss oils will show thickening upon the addition of zinc oxide or lead pigments, presumably accompanied by the neutralization of some of the fatty acids, and that these livers will dissolve upon the addition of additional rosin or linseed fatty acids. Such thickening, however, will then recur in the future if the addition of fatty acids in insufficient, presumably due to the exhaustion of the added fatty acids by neutralization.

In discussing a somewhat similar case of precipitation of soaps, i.e., the precipitate formed by overlimed gloss oils upon standing, W. T. Pearce (3) holds that the soap consists of colloidally dispersed complex molecules of the calcium salt of abietic acid combined with abietic acid; these give a precipitate of a gel character upon coalescence. The presence of a sufficient amount of free fatty or abietic acid will prevent such precipitation. Such a precipitate must not be confused with the precipitate of abietic acid sometimes thrown out by insufficiently limed gloss oils.

The appearance of greatly increased viscosity which characterizes livering is also characteristic of a number of familiar cases of precipitation of gels, thus, the high viscosity of nitrocellulose or alkyd resin solutions upon the addition of sufficient mineral spirits to cause precipitation.

In studying the process of gelation, E. W. J. Mardles (4) using cellulose acetate in benzyl alcohol, distinguishes three stages in the process:—

1. Coalescence of fine to large particles;
2. Aggregation of these particles into clusters;
3. The linking of clusters to form a rigid jelly.

The second stage is characterized by the development of high viscosity, and the third stage is presumably of plastic character.

The formation of aggregates may be noted in the case of highly cooked china wood oil varnishes which tends to thicken upon standing. Prior to recent developments, oxidized oils which were thinned with mineral spirits past a certain point would show a tendency to precipitate, but the development of any increase in viscosity just prior to precipitation has never been noted. However, it has been noted that when these overthinned oxidized oils were used as the vehicles of highly pigmented paints, i.e., flat wall paints, the precipitation was marked by an appearance similar to that of a livered paint, although the pigments were perfectly neutral.

In determining the amount of soap formation in livered enamels, Wolff (5) found that the percentage of soap formed was very small. This would be inferred by noting the decrease in acid number of the oil of Marling's zinc oxide-linseed oil pastes. Wolff and E. Karsten (6) offer the hypothesis that the livering is caused by the neutralization of opposite electrical charges carried by the pigment and the oil. Wolff further states that the addition of zinc soaps to enamels does not cause livering.

A phenomenon similar to livering of enamels will occur when copper or aluminum bronze powder is permitted to stand in a nitrocellulose lacquer. Bogin, Kelly and Maroney (7) found that this thickening or gelling could be prevented by the addition of less than one percent of certain acids, for instance, boric, citric or tartaric.

McBurney and Nollan (8) state that the livering of enamels and nitrocellulose lacquers may be prevented by the addition of certain acids, the most effective for lacquers being those having a primary dissociation constant of 2.0 to 4.7 and for enamels those having a primary dissociation constant of 1.0 to 3.4.

Procedure

The committee prepared eight varnishes, the first four to represent varnishes of rather high acid numbers, the second four to be representative of low acid number varnishes. (See table 1.) These were cooked to a predetermined formula and an attempt was made to so body the oil as to obtain "H" viscosity (Gardner-Holdt scale) with the specified amount of thinner. The viscosities actually obtained varied from "G" to "I". The first six varnishes were prepared in standard varnish kettles, the last two in a ten-gallon laboratory kettle. Varnishes A, B, C and D increased considerably in viscosity upon standing for eight months. All enamels were ground from fresh batches of varnish.

The "four-hour resin" used was the medium grade of modified phenol formaldehyde customarily used in four-hour varnishes. Because the committee did not desire to reflect credit or discredit upon competitive materials, several brands were weighted out into similar containers and these shuffled until the identity of the resin was lost.

Table 1

Formulae of Varnishes

Varnish "A"
100 lbs. 5% limed rosin.
5 lbs. fused lead resinate.
8 oz. cobalt linoleate 5%.
40 gals. china wood oil.
5 gals. kettle bleached linseed.
80 gals. 48° Be petroleum thinner.
Body oil and rosin at 560° to heavy string, check with linseed, hold at 480° and stir in driers, thin at 400°.

Varnish "B"
100 lbs. 5% limed rosin.
5 lbs. fused lead resinate.
8 oz. cobalt linoleate 5%.
30 gals. china wood oil.
5 gals. kettle bleached linseed.
60 gals. 48° Be petroleum thinner.
Body oil and rosin at 560° to heavy string, check with linseed, hold 480° and stir in driers, thin at 400°.

Varnish "C"
100 lbs. 5% limed rosin.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate 5%.
18 gals. china wood oil.
2 gals. kettle bleached linseed.
36 gals. 48° Be petroleum thinner.
Body wood oil and 50 pounds rosin at 560°, check with remainder of rosin crushed and linseed, hold at 480° and stir in driers, thin at 400°.

Varnish "D"
90 lbs. clear amber congo.
10 lbs. 5% limed rosin.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate 5%.
18 gals. chinawood oil.
2 gals. kettle bleached linseed.
24 gals. 48° Be petroleum thinner.
12 gals. turpentine.
Fuse Congo at 625°, add wood oil heated to 350° with rosin, body at 560°, check with linseed and hose, hold at 480° and stir in driers, thin at 400°.

Varnish "E"
100 lbs. four-hour resin.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate 5%.
20 gals. chinawood oil.
5 gals. kettle bleached linseed.
64 gals. 48° Be petroleum thinner.
Body resin and wood oil at 560°, check with linseed, hold at 480°, and stir in driers, thin at 400°.

Varnish "F"
100 lbs. four-hour resin.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate.
20 gals. chinawood oil.
5 gals. kettle bleached linseed.
48 gals. 48° Be petroleum thinner.
Cook same as "E".

Varnish "G"
100 lbs. ester gum, acid No. 6.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate.
30 gals. chinawood oil.
5 gals. kettle bleached linseed.
56 gals. 48° Be petroleum thinner.
Cook same as "E".

Varnish "H"
100 lbs. ester gum, acid No. 6.
5 lbs. fused lead resinate.
4 oz. cobalt linoleate.
25 gals. chinawood oil.
5 gals. kettle bleached linseed.
46 gals. 48° Be petroleum thinner.

Cook same as "E", except that 40 pounds ester gum are held out of the kettle and added with the check oil.

Fused Lead Resinate
100 lbs. rosin "N".
40 lbs. lead acetate.

Kettle Bleached Linseed

A good grade of varnish oil run one hour at 580° F.

The other materials used were of standard quality. The cobalt linoleate used was of soft consistency and reported to contain slightly over 5 percent of metallic cobalt.

All of the varnishes showed desirable properties with regard to gloss, drying, freedom from gas checking, etc.

It was felt that the percentage composition of the varnishes would be of interest, and this is shown in table 2, with the acid number and viscosity.

Table 2

Percentage Composition of Varnishes
With Acid Number and Viscosity

Varnish	A	B	C	D	E	F	G	H
Resin	10 2	13.0	20.2	20.0	12.5	16.3	13.0	15.3
Tung oil	31.9	30.5	28.3	28.0	29.5	25.5	30.4	29.3
Linseed oil	4.1	5.2	3.2	3.2	5.0	6.5	5.2	6.0
Pb soap	.5	.6	1.0	1.0	.6	.8	.6	.8
Co soap	.05	.065	.05	.05	.03	.04	.03	.04
Thinner	53.3	50.7	47.3	48.4	52.4	50.9	50.8	48.6
Acid number	9.4	16.9	23.8	8.9	7.0	7.4	3.8	3.8
Viscosity	G	H	H	I	H	H	H	H

Table 3

Polar Solvent Addition Test

Varnish	A	B	C	D	E	F	G	H
V_1 Original viscosity	138	97	82	90	110	100	75	87
V_2 Viscosity after addition	68	58	48	49	104	76	66	68
V_1-V_2	70	39	33	41	15	24	9	19
$\frac{V_1-V_2}{V_1}$	.507	.402	.404	.455	.126	.240	.120	.219
V_1-V_2 / V_1 x acid number	.0538	.0238	.0170	.0511	.0180	.0324	.0316	.0577

Gardner Alkali Addition Test

	A	B	C	D	E	F	G	H
Viscosity before addition	96	114	124	120	90	92	90	88
Viscosity after addition	180	144	155	380	205	180	199	182
Percent increase	87%	27%	25%	216%	128%	96%	121%	107%

This low pigment content was used to decrease the speed of reaction, thus making observations easier. In some of the subsequent batches a still lower proportion (three pounds per gallon) was used. The zinc oxide used in these first series of enamels was an American process lead free zinc oxide of medium acidity and oil absorption. The lithopone used was somewhat reactive and of medium oil absorption. This lithopone was used throughout the tests.

In making these batches attempt was made to eliminate, so far as possible, the variable factor of temperature. It is certain that in factory production paste in the mill would reach a higher temperature and that a much faster reaction would occur, but duplication of such conditions with available facilities did not seem desirable or feasible.

The enamels were stored at room temperatures in heated rooms. Determinations of consistency were made on the Ford cup (No. 4 orifice) at 77° F. Several cups belonging to different operators were used and the results must be interpreted as relative. It was found desirable to have the room temperature as near as possible to the desired temperature of 77° F. Variations of over two or three degrees introduced inaccuracies.

It will be noted from figures 1 and 2 that the lime hardened rosin varnishes thickened with zinc oxide at a speed proportional to their content of tung oil and inversely proportional to their content of limed hardened rosin. This was also inversely proportional to the acid number. The congo varnish reacted somewhat slower than was expected, but at a rate similar to "A". The four-hour resin varnishes thickened in the mill and were so heavy in consistency that no determinations could be made. The ester gum varnishes rapidly reached a heavy consistency after which the rate of thickening was much slower.

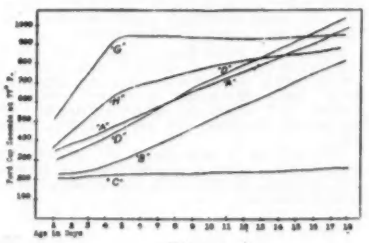


Figure 1

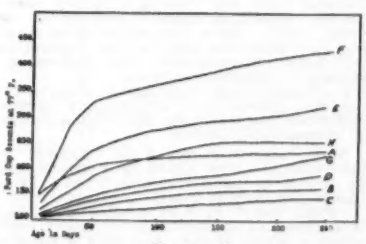


Figure 2

Figure 1

Ageing of Varnishes + 4 Lbs. ZnO Per Gallon

	1 day.	3 days.	8 days.	18 days.
A	340	360	642	922
B	200	230	460	680
C	193	200	212	*240
D	230	360	647	960
E	Livered	...	...	...
F	Livered	...	...	...
G	460	870	890	880
H	355	576	720	792

* The enamel with "C" varnish and 4 lbs. ZnO per gallon livered after eight months.

Figure 2

Ageing of Varnishes + 4 Lbs. Lithopone Per Gallon

	1 day.	3 days.	18 days.	32 days.	48 days.	144 days.	240 days.
A	150	152	152	205	205	288	245
B	110	110	115	127	128	151	150
C	100	98	110	117	130	140	140
D	105	107	132	137	142	164	177
E	133	137	182	195	205	282	300
F	165	192	270	302	360	436	438
G	95	105	142	132	160	216	205
H	115	115	146	150	175	245	230

Figure 3

Ageing of Varnish "A" + 3 Lbs. ZnO* Per Gallon

			1 day.	5 days.	8 days.	15 days.
No. 1 blank (3 lbs. ZnO per gal.)			460	720	† ..	...
No. 2 blank (4 lbs. ZnO per gal.)			† ..	...	...	...
3 lbs. ZnO per gal. +	1.6	benzoic	320	† ..	...	...
	+ 5.0	rosin	360	† ..	...	...
	1.6%	salicylic	† ..	...	...	...
	1.0%	citric	300	375	450	...
	1.0%	maleic	400	† ..	...	...
	1.0%	succinic	360	† ..	...	...
	1.0%	tartaric	225	400	525	† ..
	1.0%	boric	200	275	335	440
(ground in)	1.0%	phthalic	330	† ..	...	...
(dissolved by heat)	1.0%	phthalic	350	† ..	...	...
(dissolved in BuOH)	1.0%	phthalic	275	† ..	...	...

* French process. † Livered.

Figure 4

Ageing of Varnish "B" + 3 Lbs. ZnO* Per Gallon

			1 day.	3 days.	7 days.	14 days.
No. 1 blank (3 lbs. ZnO per gal.)			250	300	400	600
No. 2 blank (4 lbs. ZnO per gal.)			† ..	...	...	...
3 lbs. ZnO per gal. +	1.2%	benzoic	† ..	...	...	...
	5. %	rosin	† ..	...	...	...
	1.2%	salicylic	† ..	...	...	...
	.6%	citric	445	600	† ..	...
	.6%	oxalic	† ..	...	...	...
	.6%	maleic	600	† ..	...	...
	.6%	succinic	465	† ..	...	...
	.6%	tartaric	200	290	320	400
	.6%	boric	200	205	225	300
(ground in)	.6%	phthalic	250	† ..	...	...
(dissolved by heat)	.6%	phthalic	315	† ..	...	...
(dissolved in BuOH)	.6%	phthalic	300	† ..	...	...

* French process. † Livered.

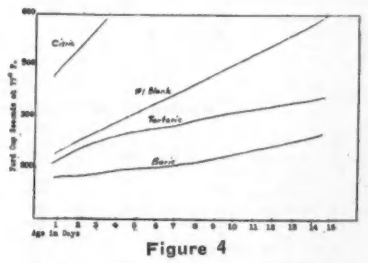


Figure 4

The additions of solvent were very small, 3 cc. of the solvent being added to 150 grams of the varnish with thorough agitation. Several solvents were tried and it was found that the greatest decrease in viscosity occurred with cellosolve or monoethyl-ether of ethylene glycol. The results are shown in table 3.

These results probably indicated the colloidal state of the varnish, but the results were not in proportion to the degree of reactivity. However, it was noted that when the result was divided by the acid number of the varnish, the resulting figure was quite proportional to the thickening for the first four varnishes, as per tables 1 and 3.

Gardner (9) describes a test for measuring the potential reactivity of varnishes by the addition of 10 percent of 10 percent solution sodium hydroxide solution. This, however, resulted in the gelation of the varnishes to such an extent that their consistency could no longer be measured on the Ford cup. The test was therefore modified to 5 percent of 5 percent sodium hydroxide solution, with the following results. This test was run after two months storage, when the consistency of the varnishes had changed to a slight extent. Because of the jelly-like nature of the varnish after reacting with the sodium hydroxide, no great accuracy is possible.

It will be noted that these tests gave results indicative of the degree of reactivity of the first four varnishes, with the exception of the alkali addition test on the Congo varnish. They did not give reliable indications of the activity of the second group of varnishes having low acid numbers.

In the case of the four-hour resin varnishes, this might be explained by the presence of the highly complex phenol-formaldehyde product, but some other explanation must be found for the behavior of the two ester gum varnishes. It is possible that plastometer determinations might have shed some light upon this question, but because of limited facilities this was not possible.

The next step was the manufacture of enamels containing small amounts of acid catalysts. These were made up in the same manner as the previous tests. The acid catalysts were incorporated in different ways, by heating with a small portion of the varnish, by dissolving in an appropriate organic solvent and by simply grinding in with the pigment the desired amount of catalyst, previously ground in a hand mortar and passed dry through a 200 mesh screen. Regardless of the method of incorporation similar results were obtained, and those given in the accompanying tables represent the results obtained by grinding the acid in with the pigment.

The first zinc oxide enamels of this

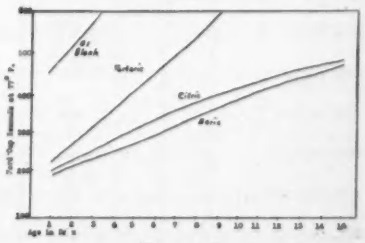


Figure 3

series contained the four-hour varnishes, and it was found that even when the catalysts were employed in large excess, it was impossible to prevent or even to inhibit the livering of the enamels. No determinations could be made on these tests.

lithopone and the necessary observations made. The results are shown in table 4. It was found that the drying was somewhat inhibited, but that the film did not show any permanent softening. The water test was somewhat affected. The settling and the gloss were not affected.

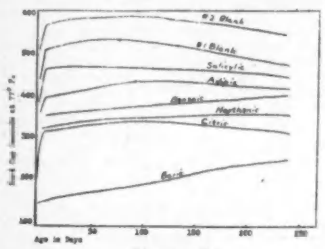


Figure 5

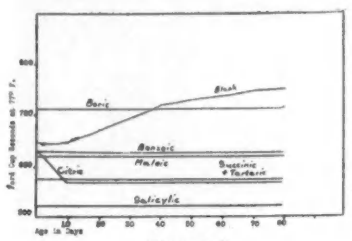


Figure 6

Figure 5

Ageing of "G" Varnish + 3 Lbs. ZnO Per Gallon

	1 day.	5 days.	100 days.	240 days.
+ 1% benzoic	360	365	390	414
+ 1% boric	165	142	197	254
+ 1% citric	210	330	350	330
+ 1% adipic	365	397	442	413
+ 1% napthenic	335	350	360	375
+ 1% phthalic	167	*..	...	...
+ 1% salicylic	388	477	480	467
No. 1 blank (3 lbs. ZnO per gal.)	430	570	530	490
No. 2 blank (4 lbs. ZnO per gal.)	509	592	600	570

* Livered.

Figure 6

Ageing of "F" Varnish + 4 Lbs. Lithopone Per Gallon

	1 day.	10 days.	20 days.	40 days.	80 days.
Blank	645	645	669	718	744
.7% benzoic	634	634	634	634	634
.7% boric	731	718	718	718	718
.7% citric	622	574	574	574	574
.7% maleic	634	622	622	622	622
.7% succinic	574	574	574	574	574
.7% salicylic	525	525	525	525	525
.7% tartaric	574	574	574	574	574

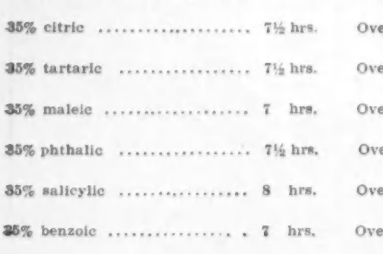


Figure 7

Figure 7

Ageing of "F" Varnish + 4 Lbs. { 62 oz.—Lithopone. 2 oz.—ZnO Per Gallon

	1 day.	3 days.	12 days.	18 days.	28 days.
Blank	141	262	394	430	502
+ 1% salicylic	190	246	300	386	490
+ 1% benzoic	187	280	340	520	536
+ 1% boric	120	158	182	243	340
+ 1% citric	138	190	208	244	300
+ 1% tartaric	140	264	340	408	450
+ % oxalic	196	282	328	392	404

Further tests with zinc oxide were run with "A," "B," and "G" varnishes and with lithopone and "F" and "G" varnishes. Refer to figures 3, 4, 5, 6 and 7.

The tests made with zinc oxide and "A" and "B" varnishes employed an indirect or "French process" zinc oxide. This material was necessarily of low acidity and high reactivity. The enamels so made reacted so rapidly as to make determinations difficult and in the remainder of the tests used the same oxide employed in the tests shown in figure 1.

Results of the zinc oxide tests showed that the monobasic acids did not prevent thickening and in some cases appeared to increase the consistency. The dibasic acids gave indifferent results. The two tribasic acids, boric and citric, prevented the thickening to a certain degree, the boric apparently being of somewhat more value than the citric.

The lithopone batches were ground somewhat too late to give positive results, but it was found that the thickening was prevented to some extent. Figures 6 and 7 show the results with "F" varnish and lithopone and with lithopone containing 3.1 percent of added zinc oxide. The tests in figure 7 were run with a Stormer viscosimeter.

It was felt that it would be of interest to show the effects of the different acid catalysts upon the drying, gloss and other properties of the enamels. Metal panels were therefore sprayed and brushed with the enamel made with "G" varnish and

In discussing the results obtained, we would like to insert a few remarks in regard to consistency.

Classifications

All varnishes, enamels, paints and lacquers must necessarily be classified as follows:—

a—Truly viscous materials, in which any flow or movement is in direct proportion to the strength or magnitude of the force causing the movement. This motivating force may be that imparted by a stirrer or pump, or by the pull of gravity.

b—Plastic materials, in which movement or flow will not begin until the motivating force has reached a certain magnitude. This magnitude is designated the yield value. Once the motivating force has exceeded the yield value, movement will occur in proportion to further increases in motivating force.

c—Pseudo-plastic materials, those having the general characteristic of plastic materials, but which do not show a sharply defined yield value.

Most varnishes might be expected to fall into the first class, but many will be found to have a yield value. Most paints are pseudo-plastic materials. (10) "False body" (11) in a paint or enamel is defined as a condition of heavy consistency when at rest, but with a thinner consistency after vigorous stirring. This condition prevails in a great many paints and enamels and we found reason to believe that it prevailed to some extent in at least the enamels made with "G" and "H" varnishes.

Our measurements of consistency were made with the Ford cup, as a matter of convenience and because it was available to all of the members of the committee. While this is an excellent instrument for production control, it gives only an indication of general consistency and does not differentiate between a viscous and a plastic or pseudoplastic substance. It is more suited to lower consistencies than occurred in these tests. We found that large inaccuracies were introduced if the room temperature was more than two or three degrees different from the desired temperature for the test.

Table 4

Effect of Acid Catalysts Upon the Properties of Enamel Made With 4 Pounds of Lithopone Per Gallon of "G" Varnish

	Drying—To touch.	Drying—Hard.	Toughness of film.	Settling.	24-hour water test.	Gloss.
Blank	4½ hrs.	Overnight	O. K.	Slow-soft	Good	Good
35% boric	7 hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% citric	7½ hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% tartaric	7½ hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% maleic	7 hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% phthalic	7½ hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% salicylic	8 hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good
35% benzoic	7 hrs.	Overnight	O. K.	Slow-soft	Very slightly affected	Good

We feel that a study of the consistency of such enamels with regard to viscosity and plasticity will shed further light upon the nature is beyond the facilities ordinarily available in the industry, we feel that at least we have defined some of the conditions of the problem.

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Cincinnati-Dayton-Indianapolis Club Paper

The paper of the Cincinnati-Dayton-Indianapolis Club was read by Frank L. Chinery. It was a discussion of the same subject treated in the 1932 paper, and also read by Mr. Chinery.

Effect of Driers on Durability

The research reported in our paper on this subject last year (Scientific Section, Circular No. 423, Educational Bureau, American Paint and Varnish Manufacturers' Association, November, 1932) has been continued through the past year. The results and conclusions arrived at, after six months' outside exposure of a thirty-gallon rosin ester gum chinawood oil and a thirty-gallon rosin ester gum linseed oil varnish applied to metal panels, dispels in a measure one of the ideas existent in the paint industry since infancy.

In order to have the data at hand so that the reader may be familiar with the code and the percentage of drier that was used in proportion to the amount of oil, the following figures are given:—

Drier Concentration	Cobalt	Manganese	Lead
No. 1	0.038	0.038	0.144
No. 3	0.115	0.115	0.432
No. 7	0.278	0.278	1.007
No. 10	0.384	0.384	1.440

The driers were used in the proportion of one part cobalt, one of manganese, and 4 of lead. The amounts of each added to the oil were one, three, seven and ten times the minimum, used as the base. Hereafter the concentrations of drier are referred to as cobalt linoleate No. 1, manganese soligen No. 10, lead linoleate No. 7, etc.

Exposure Tests

The following is a series of tables indicating on the results of the major exposure test of drier combinations with both linseed and chinawood oils. These tables represent the results as recorded by one observer, which show some variations from the observations of the other two observers, though in general the results may be said to be the same. These are the most thorough and, therefore, are included as a part of this week.

There are nine tables, eight of which represent failures as described in the New York club's code for evaluating exposure tests (see Scientific Section, American Paint and Varnish Manufacturers' Association, Circular 404 [Dec., 1931], Page 585).

Table 9 is a summary of the results. This table shows a comparison of linseed and chinawood oils with the different drier combinations.

The oil that showed the least sign of failure is marked on the chart as being the better oil.

For example:—Co. Sol. No. 7 in wood oil did not show signs of failure in pitting as soon as the linseed oil blend, so the letter (W) was marked in that column.

In case both the wood and linseed oil blend failed at the same time, a dash (—) was placed in the column.

The space was left blank if there was no sign of failure when the test was ended.

The following panels are not comparable to the others as a different primer, which failed, was used:—

Pb. Sol. Nos. 1, 3, 7, 10 and linseed oil with no drier.

Conclusions

The following general conclusions are drawn from the data submitted by all persons making an inspection of the panels:—

Linseed oil gives a better appearance; has a lesser tendency than wood oil to pit, flake or scale off.

Chinawood oil produces a better gloss and shows less checking on both primed and bare metal.

The amount of lead or manganese used as a drier was not high enough to effect the ultimate or final breakdown of the varnish.

No acceleration of failure results from the use of 1.50 percent lead. With manganese there was a slight initial effect noted on the linseed panels, due to the surface action of the drier, which was called failure, but longer exposure showed that no acceleration of ultimate failure or final breakdown results with the use of 0.40 percent manganese. Both of these amounts are greater than the excess that might be used as a drier.

The cobalt series, in linseed oil varnishes especially, shows a definite progressive failure with an increase in the amount of drier. Here the increased strength of the drier, in the percentage used, was sufficient to accelerate failure in proportion to the increase in the amount of cobalt used. All the varnishes containing cobalt are still giving protection. Even with the use of 0.40 percent cobalt complete failure has not occurred. (All panels are being exposed again to see what the nature of the final failure or ultimate breakdown will be.)

Linoleates and naphthenates show little if any difference in results.

Part II

As stated in our previous paper (Scientific Circular No. 423, November, 1932) the varnishes with added driers prepared as described in that paper were to be tested for tensile strength, elongation and Fade-O-Meter hours to determine the effect of driers on the ageing of oil films. Tests were made on new film and films aged for six months. The methods of preparation and testing the varnish films were as follows:—

Preparation of the Film

A portion of the varnish, from which the film was to be prepared, was weighed to contain 7.5 grams of solids and naphtha was added to make the thinner 35 percent of the total weight. We found 7.5 grams of varnish gave a film of such a thickness that it could be handled easily without requiring lengthy drying to produce a reasonable uniformity. The varnish was then brushed out on an amalgamated tin plate 8 inches by 9 inches and placed in the drying oven. The varnishes used were of such a viscosity that 35 percent thinner had flow enough to brush out easily but had little tendency to flow over the edge of the plate when it was kept level. The niformity of the film was controlled by using a definite weight of varnish, brushing out evenly, and keeping the plates perfectly level until the film was set.

The oven was heated by a gentle flow of air, dehydrated with calcium chloride to produce a uniform condition, passing over a steam coil in the bottom. Most of the linseed oil varnishes were dried between 170 and 180° F., but some which had a pronounced tendency to wrinkle were dried at 140 to 150° F. until set and

Table 1

General Appearance

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	8
	3	0	0	0	0	0	0	0	0	0	0	8	8
	7	0	0	0	0	0	0	0	0	8	8	8	4
	10	0	0	0	0	0	0	0	0	8	8	8	4
Co Lin.	1	8	8	8	8	8	8	8	8	8	8	8	4
	3	0	0	8	8	8	8	8	8	8	8	8	8
	7	8	8	8	8	8	8	8	8	8	8	8	4
	10	0	0	0	0	0	0	0	8	8	8	8	8
Pb Sol.	1	0	8	8	8	8	8	8	8	8	8	8	8
	3	0	0	8	8	8	8	8	8	8	8	8	4
	7	0	0	8	8	8	8	8	8	8	8	8	4
	10	0	0	0	0	0	0	0	0	0	8	8	4
Pb Lin.	1	8	8	8	8	8	8	8	8	8	8	8	4
	3	0	0	0	0	0	0	0	0	0	8	8	4
	7	0	0	0	0	0	0	8	8	8	8	8	4
	10	0	8	8	8	8	8	8	8	8	8	8	4
Mn Sol.	1	0	0	0	0	0	0	0	0	8	8	8	4
	3	0	0	0	0	0	0	0	8	8	8	4	4
	7	0	0	0	0	0	0	0	8	8	8	8	4
	10	0	0	0	0	0	0	0	8	8	8	8	4
Mn Lin.	1	0	0	0	0	0	0	0	0	0	8	4	4
	3	0	8	8	8	8	8	8	8	8	8	8	4
	7	0	0	0	0	0	0	0	8	8	8	8	4
	10	0	0	0	0	0	0	0	8	8	8	8	4
L. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	8	4	4
	3	0	0	0	0	0	0	0	0	0	8	8	4
	7	8	8	8	8	8	8	8	8	8	8	8	8
	10	8	8	8	8	8	8	8	8	8	8	8	8
Co Lin.	1	0	0	0	0	0	0	0	0	8	4	4	
	3	0	0	0	0	0	8	8	8	8	8	4	4
	7	0	0	0	0	0	0	0	0	0	8	8	4
	10	8	8	8	8	8	8	8	8	8	8	8	8
Pb Sol. (Primer failed)	1	4	4	4	4	4	4	4	4	4	4	4	4
	3	8	4	4	4	4	4	4	4	4	4	4	4
	7	8	4	4	4	4	4	4	4	4	4	4	4
	10	0	8	4	4	4	4	4	4	4	4	4	4
Pb Lin.	1	0	0	0	0	0	0	0	0	8	8	4	4
	3	0	0	0	0	0	0	0	0	8	8	4	4
	7	0	0	0	0	0	0	0	0	0	0	4	4
	10	0	0	0	0	0	0	0	0	0	0	8	8
Mn Sol.	1	0	0	0	0	0	0	0	0	0	8	8	8
	3	0	0	0	0	0	0	0	0	8	8	4	4
	7	0	0	0	0	0	0	0	0	8	8	4	4
	10	0	0	0	0	0	0	0	0	8	8	4	4
Mn Lin.	1	0	0	0	0	0	0	0	0	8	8	8	4
	3	0	0	0	0	0	0	8	8	8	8	8	4
	7	8	8	8	8	8	8	8	8	4	4	4	4
	10	0	0	0	0	0	0	0	0	8	8	4	4
Linseed (primer failed)		8	4	4	4	4	4	4	4	4	4	4	4
C. W. O.		8	8	8	8	8	8	8	8	8	8	8	4

Table 2

Gloss

Code: 0-Excellent; 3-Fair; 5-Eggshell; 4-Flat.

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	8
	3	0	0	0	0	0	0	0	0	0	0	0	8
	7	0	0	0	0	0	0	0	0	8	8	8	8
	10	0	0	0	0	0	0	0	0	8	8	8	8
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	8
	7	0	0	8	8	8	8	8	8	8	8	8	8
	10	0	0	0	0	8	8	8	8	8	8	8	8
Pb Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Lin.	1	0	0	0	0	0	0	0	0	8	8	8	8
	3	0	0	0	0	0	0	0	0	8	8	8	8
	7	0	0	0	0	0	0	0	0	8	8	8	8
	10	0	0	0	0	0	0	0	0	8	8	8	8
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Lin.	1	8	8	8	8	8	8	8	8	8	8	8	8
	3	8	8	8	8	8	8	8	8	8	8	8	8
	7	0	0	0	0	0	0	0	0	8	8	8	8
	10	0	0	0	0	0	0	0	0	8	8	8	8
L. O. Co Sol.	1	8	8	8	8	8	8	8	8	8	8	8	8
	3	8	8	8	8	8	8	8	8	8	8	8	8
	7	0	0	0	0	0	0	0	0	8	8	8	8
	10	0	0	0	0	0	0	0	0	8	8	8	8
Co Lin.	1	0	0	0	0	8	8	8	8	8	8	8	8
	3	8	8	8	8	8	8	8	8	8	8	8	8
	7	8	8	8	8	8	8	8	8	8	8	8	8
	10	8	8	8	8	5	5	5	5	5	5	5	5
Pb Sol. (Primer failed)	1	0	0	0	0	0	0	0	8	8	8	8	8
	3	0	0	0	0	0	0	0	8	8	8	8	8
	7	0	0	0	0	0	0	0	8	8	8	8	8
	10	0	0	0	0	0	0	0	8	8	8	8	8
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	8
Mn Sol.	1	0	0	0	8	8	8	8	8	8	8	8	8
	3	8	8	8	8	8	8	8	8	8	8	8	8
	7	8	8	8	8	8	8	8	8	8	8	8	8
	10	0	8	8	8	8	8	8	8	8	8	8	8
Mn Lin.	1	8	8	8	8	8	8	8	8	8	8	8	8
	3	8	8	8	8	8	8	8	8	8	8	8	8
	7	8	8	8	8	8	8	8	8	8	8	8	8
	10	8	8	8	8	8	8	8	8	8	8	8	8
Linseed (primer failed)		0	0	0	0	0	0	0	8	8	8	8	8
C. W. O.		0	0	0	0	0	0	0	0	0	0	0	0

Table 5

Pitting

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	8	8	8	8	8	4	4	4	4
	3	0	0	0	8	8	4	4	4	4	4	4	4
	7	0	0	0	0	0	0	0	0	0	0	8	8
	10	0	0	0	8	8	8	8	8	8	8	8	8
Co Lin.	1	0	0	8	8	4	4	4	4	5	5	5	5
	3	0	0	8	4	4	4	4	4	5	5	5	5
	7	0	0	8	4	4	4	4	4	4	4	5	5
	10	0	0	0	8	8	8	8	8	8	8	4	4
Pb Sol.	1	0	0	0	8	8	8	8	8	4	4	4	4
	3	0	0	8	8	4	4	4	4	4	4	4	4
	7	0	0	8	8	4	4	4	4	4	4	5	5
	10	0	0	0	8	8	8	8	8	8	8	4	4
Pb Lin.	1	0	0	8	4	4	4	4	4	5	5	5	5
	3	0	0	8	8	8	8	8	8	8	8	8	8
	7	0	0	8	8	8	4	4	4	4	5	5	5
	10	0	0	8	8	4	4	4	4	4	4	4	4
Mn Sol.	1	0	0	8	8	8	8	8	8	8	8	8	8
	3	0	0	0	8	8	8	8	8	8	8	4	4
	7	0	0	8	8	8	8	8	8	8	8	4	4
	10	0	0	0	8	8	8	8	8	8	8	4	4
Mn Lin.	1	0	0	8	8	8	8	8	8	8	8	8	4
	3	0	0	8	8	8	8	8	8	8	4	4	5
	7	0	0	8	8	8	8	8	8	4	4	4	4
	10	0	0	8	8	8	8	8	8	4	4	4	4
L. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	8	8	8
	10	0	0	0	0	0	0	0	0	0	0	0	0
Co Lin..	1	0	0	0	0	0	0	0	0	8	8	8	8
	3	0	0	0	0	0	0	0	0	8	8	8	8
	7	0	0	0	0	0	0	0	0	8	8	8	8
	10	0	0	8	8	8	4	4	4	4	4	4	4
Pb Sol. (Primer failed)	1	0	0	0	0	0	0	0	0	0	0	8	8
	3	0	0	0	0	0	0	0	0	0	0	8	8
	7	0	0	0	0	0	0	0	0	0	0	8	8
	10	0	0	0	0	0	0	0	0	0	0	8	8
Pb Lin.	1	0	0	0	0	0	0	0	0	0	8	8	4
	3	0	0	0	0	0	0	0	0	0	8	8	4
	7	0	0	0	0	0	0	0	0	0	8	8	4
	10	0	0	0	0	0	0	0	0	0	8	8	4
Mn Sol.	1	0	0	0	0	0	0	8	8	8	8	8	8
	3	0	0	0	0	0	0	8	8	8	8	8	8
	7	0	0	0	0	0	0	8	8	8	8	8	8
	10	0	0	0	0	0	0	8	8	8	8	8	8
Mn Lin.	1	0	0	0	0	0	0	8	8	8	8	8	8
	3	0	0	0	0	0	0	8	8	8	8	8	8
	7	0	0	0	0	0	0	8	8	8	8	8	8
	10	0	0	0	0	0	0	8	8	8	8	8	8
Linseed (primer failed)		0	0	0	0	0	0	0	0	8	8	8	8
C. W. O.		0	0	0	8	8	8	8	8	8	8	4	4

then finished at 170 to 180° F. The chinawood oil varnishes were dried between 140 and 150° F. The time of drying was a variable which could not be definitely set for all varnishes because the films had to be dry enough to handle before taking from the plates. The time of drying for the linseeds was about twenty-four hours when dried at 170 to 180° F. When a preliminary drying was necessary forty-eight hours was generally required. All of the lead films were dried for forty-eight hours. The chinawood oil varnishes were all dried for thirty hours. After stripping from the plates all films were allowed to stand in the air from seven to eight days before testing.

Ageing

The films were aged for six months in a cabinet which was constructed to exclude as much light as possible. This was ventilated by shielded openings in the top and bottom to allow a free circulation of air. No attempt was made to control the humidity but all were aged in exactly the same way. The only variable which was introduced was the season when exposure was started, approximately three months intervening from the time the first film was made until the last was in the ageing cabinet. The films were aged in the dark to show more clearly the effect of the driers by eliminating the effect of sunlight.

Methods of Testing

Samples were cut from the film with a die which is illustrated in the diagram below.

The tensile strength and elongation was determined on these samples with a Sutten Yarn Tester having the jaws spread 3 inches apart. An average of at least six tests was taken for each result reported.

Table 3

Checking Over Bare Metal

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad.

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	8	8	8	4	4	4	4
	3	0	0	0	0	8	8	8	8	4	4	4	4
	7	0	0	0	8	8	8	8	8	4	4	4	4
	10	0	0	0	8	8	8	8	4	4	4	4	5
Co Lin.	1	0	0	0	0	0	0	0	8	8	4	4	5
	3	0	0	0	8	8	8	8	8	5	5	5	5
	7	0	0	8	8	4	4	4	4	5	5	5	5
	10	0	0	0	8	4	4	4	4	5	5	5	5
Pb Sol.	1	0	0	0	0	0	0	0	8	4	4	4	5
	3	0	0	0	0	0	0	0	8	8	4	4	5
	7	0	0	0	0	0	0	0	8	8	8	8	4
	10	0	0	0	0	0	0	0	0	8	8	4	5
Pb Lin.	1	0	0	0	0	0	0	0	8	8	4	4	4
	3	0	0	0	0	0	0	0	0	8	4	4	5
	7	0	0	0	0	0	0	0	8	8	4	4	5
	10	0	0	0	0	0	0	0	0	8	8	8	5
Mn Sol.	1	0	0	0	0	0	0	0	8	8	4	4	5
	3	0	0	0	0	0	0	8	8	4	5	5	5
	7	0	0	0	0	0	0	8	8	4	4	4	5
	10	0	0	0	0	0	0	8	8	4	5	5	5
Mn Lin.	1	0	0	0	0	0	0	8	8	8	8	8	4
	3	0	0	0	0	0	0	8	5	5	5	5	5
	7	0	0	0	0	0	0	8	5	5	5	5	5
	10	0	0	0	0	0	0	8	5	5	5	5	5
L. O. Co Sol.	1	0	8	4	4	4	4	4	4	5	5	5	5
	3	0	4	4	4	4	4	4	4	5	5	5	5
	7	4	4	4	4	4	4	4	4	5	5	5	5
	10	4	4	4	4	4	4	4	5	5	5	5	5
Co Lin.	1	0	0	0	8	8	8	4	4	4	4	4	5
	3	0	8	8	4	4	4	4	5	5	5	5	5
	7	0	8	4	4	4	4	5	5	5	5	5	5
	10	4	4	4	5	5	5	5	5	5	5	5	5
Pb Sol.	1	0	0	0	0	0	0	0	0	0	0	5	5
	3	0	0	0	0	0	0	0	8	8	8	5	5
	7	0	0	0	0	0	0	0	8	8	5	5	5
	10	0	0	0	0	0	0	0	0	0	5	5	5
Pb Lin.	1	0	0	0	0	0	0	0	0	8	4	4	5
	3	0	0	0	0	0	0	0	0	8	4	5	5
	7	0	0	0	0	0	0	0	0	4	5	5	5
	10	0	0	0	0	8	8	4	4	4	4	5	5
Mn Sol.	1	8	4	4	4	4	4	5	5	5	5	5	5
	3	0	8	8	4	4	5	5	5	5	5	5	5
	7	0	8	4	4	4	4	5	5	5	5	5	5
	10	0	8	4	4	4	4	5	5	5	5	5	5
Mn Lin.	1	0	8	8	4	4	4	5	5	5	5	5	5
	3	0	8	8	4	4	4	5	5	5	5	5	5
	7	0	8	8	4	4	4	5	5	5	5	5	5
	10	0	8	8	8	4	4	5	5	5	5	5	5
Linseed		0	0	0	0	0	0	0	0	0	0	4	5
C. W. O.		0	0	0	0	0	0	8	8	8	8	5	5

Fade-O-Meter tests were made by exposure in the machine operating at a temperature of 170 to 175° F. at the point of exposure. The point of failure was determined by the breaking of the film after it had been taken from the machine, cooled to room temperature and bent sharply. The results are reported as the number of hours of exposure before this occurs.

The properties of the film containing the drier would be expected to be the resultant of the properties of the drier itself and the varnish, and in addition, there would be the catalytic effect of the drier on the oil.

That is, in the case of tensile strength, for example, the tensile strength of the drier itself is much smaller than that of the varnish so that a mixture would be somewhere between that of the drier and the varnish, but just at what point it would be impossible to predict. But, in addition to this influence, is that of the catalytic action of the drier on the oil itself. Since this catalytic effect also has no known relation to the amount added, we are wholly in the dark as to the effect on the properties of the film of various additions of drier.

We would not be surprised then to find the values as found to "run all over the lot" in a seemingly haphazard fashion. In order to make a systematic study of the effect of the various driers on the new and aged films we arranged them in tables in order of increasing tensile strength, elongation and hours of exposure in the Fade-O-Meter before failure.

One of the first observations is the incompleteness of the work. There is a very definite indication that increasing amounts of drier produce different types of films but the increase in the concentration of drier is too large to show more than a very general indication of the trend.

Several irregularities are observed. Some of these are undoubtedly the results of experimental errors and it is unfortunate that limited time did not permit more checks.

In the tabulation and interpretation of the results we paid but scant attention

Table 4

Checking Over Primed Surface

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	8	8	8	4	4	4	5
	3	0	0	8	8	8	8	8	4	5	5	5	5
	7	0	0	0	8	8	4	4	4	5	5	5	5
	10	0	0	0	0	8	4	4	4	5	5	5	5
Co Lin.	1	0	0	8	8	8	8	4	4	4	4	4	5
	3	0	0	8	8	8	8	4	4	4	4	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	8	8	8	4	4	4	5	5	5	5
Pb Sol.	1	0	0	8	8	8	4	4	4	5	5	5	5
	3	0	0	0	8	8	8	8	8	4	5	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	0	0	0	0	0	8	8	4	5	5
Pb Lin.	1	0	0	0	0	8	8	4	5	5	5	5	5
	3	0	0	8	8	8	4	4	4	5	5	5	5
	7	0	0	0	0	8	4	4	4	5	5	5	5
	10	0	0	0	0	0	0	0	8	8	4	5	5
Mn Sol.	1	0	0	8	8	8	4	4	4	5	5	5	5
	3	0	0	8	8	8	4	4	4	5	5	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	0	0	8	4	4	4	5	5	5	5
Mn Lin.	1	0	0	8	8	8	4	4	4	5	5	5	5
	3	0	0	8	8	8	4	4	4	5	5	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	8	8	8	4	4	4	5	5	5	5
L. O. Co Sol.	1	0	0	8	8	8	4	4	4	5	5	5	5
	3	0	0	8	8	8	4	4	4	5	5	5	5
	7	0	0	8	8	4	4	4	4	5	5	5	5
	10	0	0	8	8	4	4	4	4	4	5	5	5
Co Lin.	1	0	0	0	0	8	4	4	4	4	4	5	5
	3	0	0	0	0	8	4	4	4	4	4	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	8	8	8	4	5	5	5	5	5	5
Pb Sol. (Primer failed)	1	0	0	0	0	0	8	8	5	5	5	5	5
	3	8	8	8	8	8	8	4	5	5	5	5	5
	7	0	0	8	8	8	8	4	5	5	5	5	5
	10	0	0	8	8	8	8	8	4	5	5	5	5
Pb Lin.	1	0	0	0	0	8	0	8	4	4	4	5	5
	3	0	0	8	8	8	4	4	4	4	4	5	5
	7	0	0	0	8	8	4	4	4	4	4	4	5
	10	0	0	8	8	8	4	4	4	4	4	4	5
Mn Sol.	1	0	0	0	0	8	8	4	4	4	4	5	5
	3	0	0	8	8	8	4	4	4	5	5	5	5
	7	0	0	8	8	8	4	4	4	5	5	5	5
	10	0	0	8	8	4	4	4	4	4	5	5	5
Mn Lin.	1	0	0	8	8	4	4	4	4	4	5	5	5
	3	0	0	8	8	4	4	4	4	5	5	5	5
	7	0	8	8	8	4	4	4	4	5	5	5	5
	10	0	0	8	8	4	4	4	5	5	5	5	5
Linseed (primer failed)		0	0	8	8	8	4	4	4	5	5	5	5
C. W. O.		0	0	8	8	8	4	4	4	5	5	5	5

Table 6

Flaking

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	8	8
	3	0	0	8	8	8	8	8	8	4	4	4	4
	7	0	0	0	0	0	0	0	0	8	4	4	5
	10	0	0	0	0	0	0	0	8	8	8	4	4
Co Lin.	1	0	8	8	8	8	8	4	4	4	4	4	4
	3	0	0	0	0	0	0	0	8	8	8	8	8
	7	0	8	8	8	8	8	4	4	4	4	4	4
	10	0	0	0	0	0	0	0	8	8	8	8	8
Pb Sol.	1	0	0	0	8	8	8	8	8	8	8	8	8
	3	0	0	0	0	0	0	8	8	8	8	8	8
	7	0	0	0	0	0	0	8	8	8	8	8	8
	10	0	0	0	8	8	8	8	8	8	8	8	8
Pb Lin.	1	0	0	8	8	8	8	4	4	4	5	5	5
	3	0	0	0	0	0	0	8	4	4	4	4	4
	7	0	0	0	0	0	0	0	8	8	4	4	5
	10	0	0	0	8	8	8	8	8	8	8	4	5
Mn Sol.	1	0	0	0	0	0	0	0	0	8	8	8	8
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
L. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Sol. (Primer failed)	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0

to small differences in mathematical results. The results of the tensile strength and elongation tests are the average of six or more trials, but since these were found to show from 3 to 8 per cent variation, differences of less than 10 percent show nothing conclusive.

No attempt has been made to compare the linseed oils with the wood oils and each will be dealt with separately.

The tabulation of the new films show a fair amount of uniformity but the aged films where the results are of more importance were more difficult to arrange.

The high concentrations of drier show a tendency to soften the films on ageing as shown by decreasing tensile strength, higher elasticity, and longer life in the Fade-O-Meter. Generally the films which had very high tensile strength were brittle and difficult to handle. Just what action takes place is a matter of conjecture but the results seem to indicate that the high concentrations of drier have a decided effect on the liquid phase of the film. It is evident that this takes place during the ageing for in most cases it is not particularly evident in the new films.

A few of the films which were too brittle to handle to determine the tensile strength were exposed in the Fade-O-Meter. It was found that after a few minutes' exposure they had softened enough so that they would not crack when cooled and bent. Some of these stood up several hours before failing.

Generally speaking, a comparison of the strength of the new film with drier to the one without shows—

Cobalt increases the strength.

Manganese slightly increases the strength.

Lead decreases the strength.

The proportion of lead and cobalt does not seem to vary the strength with any degree of regularity. The manganese, however, gives a definite and unexpected series No. 7, No. 3, No. 10 and No. 1.

It was not easy to arrange the aged films, but an attempt was made in spite of numerous apparent irregularities.

The leads increased in strength upon ageing but maintained their position (above) the films without drier.

Manganese No. 10's and No. 3's and cobalt No. 3's lost so much strength in ageing that they became softer than the leads. The aged manganese changed their order to No. 10, No. 3, No. 1 and No. 7.

The manganese No. 7's show a noticeable gain in strength. The No. 1's remained approximately the same, while the No. 3's and No. 10's show definite losses on ageing.

Cobalts except for the No. 3's show no tendency to soften the film on ageing.

In the new films the leads, with the exception of lead linoleate No. 1, are more elastic than the films without drier. The ratio of increasing elasticity takes generally the order of increasing concentration of drier. The manganese films were more elastic than the cobalt with the exception of the manganese No. 1's. Both the cobalt and manganese films were less elastic than the films without drier.

After ageing the condition of the films shows considerable change. The film with no drier shows a larger loss of elongation. The lead No. 1's apparently do not have enough drier to hold the softness of the films and follow closely the reaction of the film without drier.

All cobalts with the exception of Co Sol. No. 3, and all of the No. 1 concentrations have an elongation of less than 30 percent. The majority of these show a loss of elongation.

All of the leads except for the No. 1's and the manganese No. 3's and No. 10's show a decided tendency to keep the film soft on ageing.

In the new films all the concentration of driers in the cobalt and manganese films have a short life in the Fade-O-Meter.

The lead stands up a little better, but all the films with drier fail in much less time than the films without driers.

After ageing all the films with the ex-

Table 7

Scaling

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	4
	10	0	0	0	0	0	0	0	0	0	0	0	8
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	8
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	8
	3	0	0	0	0	0	0	0	0	0	0	8	8
	7	0	0	0	0	0	0	0	0	0	0	0	8
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	4
	3	0	0	0	0	0	0	0	0	0	0	0	5
	7	0	0	0	0	0	0	0	0	0	0	0	4
	10	0	0	0	0	0	0	0	0	0	0	0	5
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	4
	3	0	0	0	0	0	0	0	0	0	0	0	4
	7	0	0	0	0	0	0	0	0	0	0	0	4
	10	0	0	0	0	0	0	0	0	8	8	8	4
L. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Sol. (Primer failed)	1	0	0	0	5	5	5	5	5	5	5	5	5
	3	0	0	0	5	5	5	5	5	5	5	5	5
	7	0	0	0	5	5	5	5	5	5	5	5	5
	10	0	0	0	0	5	5	5	5	5	5	5	5
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	8
	3	0	0	0	0	0	0	0	0	0	0	0	8
	7	0	0	0	0	0	0	0	0	0	0	0	8
	10	0	0	0	0	0	0	0	0	0	0	0	8
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	4
	7	0	0	0	0	0	0	0	0	0	0	0	8
	10	0	0	0	0	0	0	0	0	0	0	0	4
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	8
	3	0	0	0	0	0	0	0	0	0	0	0	8
	7	0	0	0	0	0	0	0	0	0	0	0	8
	10	0	0	0	0	0	0	0	0	0	0	0	8
Linseed (primer failed)	..	4	4	4	4	4	5	5	5	5	5	5	5
C. W. O.	..	0	0	0	0	0	0	0	0	0	0	0	0

Table 8

Peeling

Code: 0-O. K.; 8-Slight; 4-Definite; 5-Bad

Varnish.	No.	Number of weeks 11.	12.	13.	14.	15.	16.	17.	18.	20.	22.	24.	26.
C. W. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
L. O. Co Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Co Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Pb Sol. (Primer failed)	1	4	5	5	5	5	5	5	5	5	5	5	5
	3	8	8	5	5	5	5	5	5	5	5	5	5
	7	8	5	5	5	5	5	5	5	5	5	5	5
	10	0	0	0	0	5	5	5	5	5	5	5	5
Pb Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Sol.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Mn Lin.	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0
Linseed (primer failed)	..	5	5	5	5	5	5	5	5	5	5	5	5
C. W. O.	..	0	0	0	0	0	0	0	0	0	0	0	0

Chinawood Oil—Tensile Strength

New Films		Aged Films	
Pb Sol. No. 7	1040	Mn Lin. No. 10	815
Pb Lin. No. 3	1070	Mn Sol. No. 10	907
Pb Sol. No. 10	1072	Mn Sol. No. 3	1146
Pb Lin. No. 1	1155	Mn Lin. No. 3	1229
Pb Sol. No. 3	1181	Co Sol. No. 3	1172
Pb Lin. No. 10	1265	Co Lin. No. 3	1545
Pb Lin. No. 7	1275	Pb Lin. No. 10	1251
Pb Sol. No. 1	1300	Pb Sol. No. 10	1295
No drier	1350	Pb Sol. No. 7	1380
Mn Sol. No. 7	1350	Pb Lin. No. 7	1850
Mn Lin. No. 7	1360	Pb Sol. No. 1	1569
Mn Lin. No. 3	1435	Pb Lin. No. 1	1906
Mn Sol No. 3	1460	Pb Sol. No. 3	1770
Mn Lin. No. 10	1500	Pb Lin. No. 3	1850
Mn Sol. No. 10	1581	No Drier	2045
Mn Lin. No. 1	1844	Mn Lin. No. 1	1640
Mn Sol. No. 1	2131	Mn Sol. No. 1	2269
Co Sol. No. 10	1810	Mn Sol. No. 7	2165
Co Sol. No. 3	1821	Mn Lin. No. 7	2290
Co Sol. No. 7	1906	Co Lin. No. 1	2125
Co Lin. No. 10	1985	Co Sol. No. 1	2295
Co Lin. No. 1	2000	Co Lin. No. 10	2294
Co Lin. No. 7	2137	Co Sol. No. 10	Too brittle
Co Lin. No. 3	2145	Co Lin. No. 7	2435
Co Sol. No. 1	2150	Co Sol. No. 7	2635

Chinawood Oil—Elongation

New Films		Aged Films	
Mn Sol. No. 1	14	Mn Lin. No. 7	13
Co Sol. No. 10	15	Pb Lin. No. 1	17
Co Sol. No. 7	19	Co Lin. No. 10	20
Co Lin. No. 7	24	Co Sol. No. 7	..
Co Lin. No. 10	26	Co Lin. No. 7	22
Mn Lin. No. 1	28	No drier	22
Co Lin. No. 1	31	Co Sol. No. 1	23
Co Sol. No. 1	33	Co Lin. No. 3	23
Co Lin. No. 3	33	Pb Sol. No. 1	23
Mn Sol. No. 7	35	Co Lin. No. 1	25
Co Sol. No. 3	36	Mn Sol. No. 1	29
Mn Lin. No. 7	40	Mn Lin. No. 1	30
Mn Lin. No. 3	44	Mn Sol. No. 7	35
Mn Sol. No. 3	48	Mn Sol. No. 3	44
Mn Lin. No. 10	52	Pb Lin. No. 3	45
Pb Lin. No. 1	54	Co Sol. No. 3	47
Mn Sol. No. 10	57	Pb Sol. No. 3	50
No drier	61	Pb Lin. No. 7	55
Pb Sol. No. 1	63	Pb Sol. No. 7	59
Pb Lin. No. 3	68	Pb Sol. No. 10	59
Pb Lin. No. 10	72	Pb Lin. No. 10	69
Pb Lin. No. 7	73	Mn Sol. No. 10	71
Pb Sol. No. 7	74	Mn Lin. No. 3	78
Pb Sol. No. 3	75	Mn Lin. No. 10	94
Pb Sol No. 10	80	Co Sol. No. 10	Too brittle

Chinawood Oil—Fade-O-Meter Hours

New Films		Aged Films	
Co Lin. No. 3	3	Co Lin. No. 7	3
Co Sol. No. 3	3	Co Sol. No. 7	5.5
Mn Lin. No. 3	3	Mn Lin. No. 1	6
Mn Sol. No. 3	3	Mn Sol. No. 1	6
Co Lin. No. 7	3	Mn Lin. No. 3	6
Mn Lin. No. 7	3	Mn Sol. No. 3	6
Mn Sol. No. 7	3	Co Sol. No. 3	6
Co Sol. No. 7	3	Co Lin. No. 3	9
Co Lin. No. 10	3	Co Lin. No. 1	9
Mn Lin. No. 10	3	Co Sol. No. 1	11.5
Co Sol. No. 10	3	Pb Lin. No. 1	9
Mn Sol. No. 10	3	Pb Sol. No. 1	17.5
Co Sol. No. 1	3	Co Lin. No. 10	11.5
Co Lin. No. 1	5.5	Co Sol. No. 10	..
Mn Sol. No. 1	3	Mn Lin. No. 10	11.5
Mn Lin. No. 1	5.5	Mn Sol. No. 10	11.5
Pb Sol. No. 7	4.5	Mn Lin. No. 7	11.5
Pb Lin. No. 7	5.5	Mn Sol. No. 7	58
Pb Lin. No. 1	5.5	Pb Sol No. 10	26
Pb Sol. No. 1	5.5	Pb Lin. No. 10	39
Pb Lin. No. 3	5.5	No drier	35.5
Pb Sol. No. 3	7	Pb Sol No. 3	32
Pb Lin. No. 10	4.5	Pb Lin. No. 3	46.5
Pb Sol. No. 10	7	Pb Lin. No. 7	40.5
No drier	35.5	Pb Sol. No. 7	49

Linseed Oil—Tensile Strength

New Films		Aged Films	
Pb Lin. No. 10	60	Pb Lin. No. 1	52
Pb Sol. No. 10	115	Pb Sol. No. 1	66
No driers	146	Pb Lin. No. 3	59
Pb Sol No. 1	181	Pb Sol. No. 3	114
Pb Lin. No. 1	206	Pb Sol. No. 7	134
Pb Lin. No. 3	225	Pb Lin. No. 7	252
Pb Sol. No. 3	238	Pb Lin. No. 10	148
Mn Lin. No. 7	321	Pb Sol. No. 10	180
Mn Sol. No. 7	335	No drier	223
Pb Sol. No. 7	376	Mn Lin. No. 7	225
Pb Lin. No. 7	406	Mn Sol. No. 7	282
Co Lin. No. 10	402	Co Lin. No. 10	309
Co Sol. No. 10	721	Co Sol. No. 10	475
Co Lin. No. 1	443	Co Sol. No. 7	179
Co Sol. No. 1	489	Co Lin. No. 7	650
Mn Sol. No. 10	454	Co Lin. No. 3	474
Mn Lin. No. 10	468	Co Sol. No. 3	490
Mn Sol. No. 1	536	Mn Lin. No. 10	337
Mn Lin. No. 1	557	Mn Sol. No. 10	732
Co Lin. No. 3	622	Mn Lin. No. 3	622
Co Sol. No. 3	665	Mn Sol. No. 3	640
Mn Sol. No. 3	1000	Co Sol. No. 1	1044
Mn Lin. No. 3	1150	Co Lin. No. 1	1241
Co Lin. No. 7	Too brittle	Mn Lin. No. 1	1380
Co Sol. No. 7	Too brittle	Mn Sol. No. 1	Too brittle

Linseed Oil—Elongation

New Films		Aged Films	
Co Lin. No. 7	Too brittle	Mn Lin. No. 1	Too brittle
Co Sol. No. 7	Too brittle	Mn Sol. No. 1	19
Mn Sol. No. 7	0.5	Co Sol. No. 10	22
Mn Lin. No. 7	2.0	Co Lin. No. 10	20
Mn Sol. No. 3	5	Co Lin. No. 1	56
Mn Lin. No. 3	6	Co Sol. No. 1	58
Co Sol. No. 10	43	Mn Sol. No. 10	19
Co Lin. No. 10	83	Mn Lin. No. 10	71
Mn Sol. No. 1	67	Co Lin. No. 7	52
Mn Lin. No. 1	73	Co Sol. No. 7	78
Mn Lin. No. 10	67	Mn Sol. No. 3	67
Mn Sol. No. 10	68	Mn Lin. No. 3	68
Co Lin. No. 3	67	Pb Lin. No. 3	61
Co Sol. No. 3	68	Pb Sol. No. 3	129
Co Lin. No. 1	73	Pb Lin. No. 10	87
Co Sol. No. 1	98	Pb Sol. No. 10	90
Pb Sol. No. 10	71	Co Sol. No. 3	95
Pb Lin. No. 10	102	Co Lin. No. 3	96
Pb Sol. No. 7	105	Pb Lin. No. 1	84
Pb Lin. No. 7	109	Pb Sol. No. 1	101
Pb Sol. No. 3	119	Mn Sol. No. 7	104
Pb Lin. No. 3	120	Mn Lin. No. 7	115
No drier	122	Pb Sol. No. 7	105
Pb Sol No. 1	133	Pb Lin. No. 7	139
Pb Lin. No. 1	147	No drier	119

Linseed Oil—Fade-O-Meter Hours

New Films		Aged Films	
Co Lin. No. 3	6	Co Sol. No. 3	19.5
Co Sol. No. 3	6	Mn Sol. No. 1	27.5
Mn Lin. No. 3	6	Mn Lin. No. 3	27.5
Mn Sol. No. 3	6	Mn Sol. No. 3	27.5
Co Sol. No. 7	6.5	Co Lin. No. 7	27.5
Co Lin. No. 7	6.5	Co Sol. No. 7	27.5
Co Lin. No. 10	7	Pb Sol. No. 3	....
Co Sol. No. 10	7	Mn Sol. No. 10	27.5
Mn Lin. No. 7	7.5	Mn Lin. No. 1	31.5
Mn Sol. No. 7	8	Co Lin. No. 3	31.5
Mn Lin. No. 10	7	Pb Lin. No. 3	31.5
Mn Sol. No. 10	12	Pb Sol. No. 7	31.5
Mn Lin. No. 1	9	Mn Sol. No. 7	37.5
Mn Sol. No. 1	11	Co Sol. No. 1	44
Co Lin. No. 1	19	Pb Sol No. 1	50
Co Sol. No. 1	25	Pb Lin. No. 1	52.5
Pb Sol. No. 1	39.5	Pb Lin. No. 10	52.5
Pb Lin. No. 1	60	Co Lin. No. 1	58.5
Pb Lin. No. 3	55	Pb Sol. No. 10	70
Pb Sol. No. 3	55	Pb Lin. No. 7	70
Pb Sol. No. 7	49	No drier	76.5
Pb Lin. No. 7	73	Mn Lin. No. 7	88.5
Pb Sol. No. 10	55	Co Lin. No. 10	95.5
Pb Lin. No. 10	73	Co Sol. No. 10	....
No drier	61.5		

ception of cobalt No. 7 have a definite increase in Fade-O-Meter hours. Manganese No. 7 and No. 10 show a greater increase than No. 1 and No. 3.

With the exception of lead No. 1, all the lead films give approximately the same result as the films with no drier, again showing the low concentration of lead fails to maintain a soft film.

The manganese films are a little better than the cobalt in the higher concentration of drier. The higher amounts of manganese seem to aid in maintaining the film softness. However, both the manganese and cobalts offer much less resistance than the lead films and the film without drier.

It is of interest that ageing has no effect upon the standard film.

The new films show the linoleate and soligen of each drier to fall into position together with the exception of cobalt No. 10's.

The film without drier is the weakest with the exception of the lead No. 10. The varying amounts of drier appear to definitely affect the strength in each case. The manganese No. 10 shows a marked increase in strength, being at least twice that of any other concentration of manganese. It is of interest that while cobalt No. 7's were too brittle to handle the No. 10's could be tested.

After ageing, the lead films were all above the film without drier and had arranged themselves in order of increasing concentration. All leads show a loss of tensile strength, while the standard shows a gain.

The higher the concentration of cobalt and manganese the more the film softens upon ageing. The No. 1's show large increases in tensile strength and were inclined to be brittle. Cobalt No. 7's, which were too brittle to handle when new could be tested when aged.

In the new films, the leads and film without drier are much more elastic than the cobalts and manganese, the increasing concentration of lead producing a less elastic film.

In the case of manganese the order of increasing elongation is No. 7, No. 3, No. 1 and No. 10, while cobalts show generally the same relation.

The aged films show the higher concentration of manganese and cobalt have a tendency to soften the film on ageing, the lower amounts forming harder and more brittle films than the originals.

The film without drier shows very little change on ageing. This is also characteristic of the leads, all seemingly remaining fairly constant.

Of the new films the one without drier stands up the best. Lead, manganese and cobalt give the best results in the order named in most cases. The higher the concentration of lead the longer is the life of the film in the Fade-O-Meter.

After ageing practically all of the films stand up better in the Fade-O-Meter. The soligen films did not show as much gain as the corresponding linoleates.

Summarizing the data obtained we find some interesting results when comparing with a standard varnish containing no drier.

Tensile Strength

Chinawood Oil Varnish

New Film	Aged Film
7 decreased	14 decreased
18 increased	8 increased

All that decreased are lead. All the highest are cobalt. The 5 highest are cobalt.

Here again we call attention to the remarkable series of manganese in new films No. 7, No. 3, No. 10, No. 1, both linoleate and soligen.

In aged film manganese linoleate No. 10 and manganese soligen No. 10 are lowest in tensile while cobalt linoleate No. 10 is very high.

Linseed Oil Varnish

New Film	Aged Film
2 decreased	8 decreased
20 increased	15 increased
	7 that decreased are lead

Tensile of both new and aged are less than chinawood oil.

New and aged more nearly the same than in C. W. O. varnish.

There is little evidence that too much drier injures the film:—Lead apparently weakens the chinawood oil film . In perhaps all cases the highest strength is given by cobalt. The linoleate and soligen in each case keep close together.

Elongation

Chinawood Oil Varnish

New Films	Aged Films
18 decrease	6 decrease
7 increase	18 increase
All increases being lead.	One lead showed decrease.

The lowest is manganese linoleate No. 7 and the greatest manganese linoleate No. 10.

Linseed Oil Varnish

New Films	Aged Films
22 decreased	22 decreased
2 increased a little	2 increased
	Both that increased are lead.

Manganese soligen No. 7 is 0.5. Manganese soligen No. 10 is 68.

Here the results vary with the oil and age.

Fade-O-Meter

Chinawood Oil Varnish

New Films	Aged Films
All additions of dryer caused a great reduction of durability. The lead the least.	18 decreased 5 increased Of which 4 are lead.

Linseed Oil Varnish

New Films	Aged Films
20 decreased	20 decrease
2 both lead	2 increase
Show a small increase.	

In both the chinawood oil and linseed oil varnish, the aged films show greater durability than the new, which seems rather remarkable.

The addition of drier decreases durability both of chinawood and linseed varnishes.

Age has no effect on film without drier in the case of chinawood oil, while linseed oil age improves resistance.

From these results we draw the following general conclusions:—

Driers tend to increase tensile strength, diminish elongation, and resistance to the Fade-O-Meter.

As the concentration of drier is increased the curves do not follow a straight line, but show a general increase towards a maximum, then decrease towards a minimum, and then start to increase again.

High concentrations of drier produce films which soften on ageing.

There is little practical difference between the linoleates and soligens, the results from corresponding driers checking closely in most cases.

Cobalts have a tendency to produce harder films than manganese. Lead films are always soft, often more so than oil without drier.

All of this shows that driers have a definite effect on the liquid phase of oil films. This effect is varied by the concentration and the metal.

The results obtained are rather striking and further exploration of this field should prove worth-while.

Acknowledgment

The technical committee wishes to acknowledge the assistance of T. J. Kerr and J. C. Lowman, of the Columbus Coated Fabrics Corporation; C. R. Hunter, the Ault & Wiborg Varnish Works, Inc.; R. A. Drup, of the Lowe Brothers Company, and D. Davidson, of the Eagle-Picher Lead Company, whose laboratory work, observations and notes help to comprise the data from which this paper was prepared.

Cleveland Club Paper

The final number on the afternoon program was the paper presented by Edwin Edelstein for the Cleveland Paint and Varnish Production Club, which later was to win the annual *American Paint Journal* award.

A Study of the Effect of Addition Agents on Floating of Pigments in Paints and Enamels

This is the fourth paper dealing with the floating of pigments in paints to be presented by the Cleveland club. The first two papers dealt with the results obtained by the members of the research committee from work done in their own paint laboratories. When they started to work on the third paper of the series they found that ordinary paint laboratory equipment was not sufficient to carry on. They realized that some special equipment would have to be devised, and that someone well versed in physical chemistry would have to supervise the work. With this in mind, they enlisted the aid of Drs. Veazey and Prutton of Case School of Applied Science, who did much to make the previous paper a success. The Cleveland club was able to go ahead with work on this year's paper with the continued aid of Drs. Veazey and Prutton and C. J. Windsor, a senior student, who performed the experiments from which the data for this paper was derived.

In the first paper of this series, which was presented at the 1929 convention, they showed that one of the principal underlying causes of floating of pigments was lack of pigment wetting or dispersion, and at that time they recommended finer grinding and the use of rosin acids wherever possible to improve pigment wetting or dispersion.

In the next paper presented by the Cleveland club, at the 1930 convention, they showed that it was not only necessary to have good dispersion of the pigments in a paint, but also necessary to have equal dispersion in order to eliminate floating troubles. They maintained that two of the major causes for unequal dispersion were difference in solubility between the pigments and difference in ease or rate of dispersion. They maintained that floating could be reduced or wholly eliminated by:—

1—Selection of insoluble colors.

2—Use of pigments high in adsorptive value.

3—Selection of pigments having similar dispersion rates in the particular vehicle used.

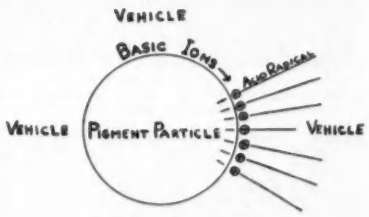
4—Equalization of differences in dispersion by protracted fine grinding.

In the third paper of this series, presented at the 1931 convention, they proved that there was a definite charge of static electricity on the pigment particles examined, but that mere neutralization of these charges was not sufficient to eliminate the float.

Work on this problem was continued in 1932, but no paper was written at that time due to lack of sufficient data. But they did find out that the charges of static electricity which pigments carry could be neutralized or reversed by using certain organic bases dissolved in hydrocarbon solvents as addition agents, and that when certain of these addition agents were used floating was either materially reduced or wholly eliminated. But due to the fact that either too much addition agent was used or that the addition agent was detrimental to the film forming characteristics of the paint, the resulting films were inferior in quality to films not containing the addition agent.

Theory Tested

The addition agents were tried out in an effort to test the theory proposed by Dr. C. F. Prutton that if we can put a material into solution in the paint vehicle that is strongly adsorbed by the pigment particles and in an ionized state, one ion of which is very soluble in the vehicle and the other strongly adsorbed by the pigment, such an addition agent would make possible the elimination of the chief causes of floating of pigments in paint, such as poor dispersion, density differences, adsorbed gases and electrical charges. For example, if we added a small amount of ammonium stearate to a paint containing lampblack, the particles of which are slightly wetted by the vehicle and which have negative electrical charges, the pigment particle would consist of an inner core of lampblack on which the positive ammonium ion was adsorbed to neutralize the negative charge (see No. 1 drawing). The stearate radicals would extend into the vehicle and hold onto a considerable number of vehicle molecules. This would produce a large slowly moving particle with no electrical charge, and with a density approaching that of the vehicle. Basic organic compounds soluble in hydrocarbon solvents seem to work better than organic acids, perhaps because they are adsorbed more readily than the acids.



No. 1 Drawing

In the case of a positively charged pigment like prussian blue used with an addition like ammonium stearate, the negative stearate radical would be adsorbed onto the positive prussian blue particle and the ammonium radical would extend into the vehicle and hold onto a considerable number of vehicle molecules thus producing a condition similar to the one mentioned above. One should not be confused by the above theory into believing that in order for a pigment particle to adsorb addition agent it must be charged either positively or negatively. After the pigment particle has been neutralized it can still adsorb more addition agent if the concentration of addition agent present is great enough. Adsorption does not depend wholly upon electrical charges but is influenced by them to a certain degree.

From the above it seemed desirable to study the adsorption from mineral spirits of basic organic compounds similar to ammonium stearate onto the various pigments which have caused the most floating troubles and to determine the amount adsorbed by each, in order that the amount of addition agent theoretically necessary to satisfy the adsorptive capacity of the pigment might be added to it during the process of paint manufacture.

Tests Applied

Twelve pigments were put through the following adsorption test:—

Five grams of pigment were put into a four-ounce tall oil sample bottle and fifty cubic centimeters of mineral spirits containing from .05 to 1.0 percent of addition agent, in solution, depending on the addition agent used in that particular case, was mixed with the pigment in the bottle. The bottle was then tightly stoppered and then sealed with paraffin. Twelve sample bottles comprising one series of twelve different pigments all mixed with the same addition agent were then fastened to the edge of a rubber wheel about two feet in diameter. The wheel was submerged in a constant temperature water bath held at 25° C. and allowed to revolve for a definite length of time depending on the addition agent used. The bottles were tumbled end over end until the adsorption reaction had reached an equilibrium. The pigment particles were then allowed to settle to the bottom of the oil sample bottles and a definite quantity of the clear mineral spirit solution, usually ten cubic centimeters, was carefully removed from the bottles with a pipette and analyzed to determine the amount of solute which the pigment has adsorbed. See table 1 for results of the above test.

The amount of solute adsorbed was determined in the following ways:—

Solute No. 1 — Rosin — Determined as residue in evaporating dish.

Solute No. 2 — Stearic Acid — Determined by titration with .006 normal alcoholic potash solution.

Solute No. 3—Linseed Fatty Acids — Determined in same way as No. 2.

Solute No. 4—Linseed Oil—Determined by saponification of the oil remaining in solution.

Solute No. 5 — Ammonium Stearate — Determined as stearic acid by evaporation and then refigured to ammonium stearate.

Solute No. 6—Stearanilide—Determined same as No. 1.

Solute No. 7 — Rosinanilide — Determined same as No. 1.

Solute No. 8 — Ammonium Resinate — Determined same as No. 1.

Table 1

Milligrams of Solute Adsorbed Per Gram of Pigment

Pigment.	No. 1. Solute rosin 11.0 grs./liter 4.5 hrs. @ 25° C.	No. 2. Stearic acid 9.8 grs./liter 4.5 hrs. @ 25° Cc.	No. 3. Linseed oil fatty acids 11.8 grs./liter 8 hrs. @ 25° C.	No. 4. Linseed oil 10.4 grs./liter 15 hrs. @ 25° C.	No. 5. Ammonium stearate 27.2 grs./liter 15 hrs. @ 25° C.	No. 6. Stearanilide 1.7 grs./liter 20 hrs. @ 25° C.	No. 7. Rosinanilide 7.5 grs./liter 15 hrs. @ 25° C.	No. 8. Ammonium resinate 21.0 grs./liter 15 hrs. @ 25° C.
Carbon black	42.6	24.9	30.7	46.6	25.5	34.6	30.5	...
Chrome yellow	6.1	14.7	11.6	49.1	13.5	26.7	4.4	4.4
Drop black	41.4	93.0	69.8	123.5	30.9	30.4	51.4	...
Ferrite yellow	9.5	11.9	8.6	46.0	19.0	10.3	11.6	...
Graphite	7.7	13.3	5.8	13.7	14.3	24.9	9.2	7.1
Lithopone	0.1	9.9	6.2	47.6	20.6	25.3	9.6	...
Mapico red oxide	1.0	28.7	8.7	66.3	16.7	10.7	8.2	7.4
Prussian blue	73.1	55.8	76.7	166.7	35.5	35.9	68.8	72.2
Para toner	4.9	29.1	5.5	3.5	11.1	21.6	4.7	1.9
Titanium dioxide	5.7	13.7	6.9	50.7	17.4	13.4	7.4	8.2
Titanox "B"	2.3	2.9	3.0	49.6	18.7	25.4	1.4	2.2
Titanox "C"	2.3	3.4	3.6	71.1	12.7	9.2	7.6	3.5

By using the information contained in table 1 paints were formulated and made containing the amounts of addition agent necessary to satisfy the adsorptive capacity of the pigments used. Each of the twenty-four paint samples was ground on the same buhrstone mill.

In order to simplify interpretation of results, the least number of ingredients were used in formulating the above series.

Two pigments of entirely different color were used in each sample in order to observe more easily any visible flotation in the dried film. Alkali refined linseed oil without any added drier was used to make the vehicle as simple as possible. In some cases, the addition agent was ground through the mill with the paint, in other cases it was added to the paint after it was ground as a solution in mineral spirits, due to the fact that the heat developed in grinding seemed to decompose some of the solutes. Solutes Nos. 1, 2, 3 and 4 were omitted from the above grinds because they did not seem to offer any interesting possibilities. Triethanolamine stearate was not included in the preliminary adsorption work, so that no adsorptive values were available, but was used in the later work as it was an organic base that seemed to have interesting possibilities. A 5 percent solution of triethanolamine stearate has a pH value of 8.46 which shows it to be slightly alkaline.

Table 2 gives the formulas of the twenty-four grinds that were made. The percent solute present in each formula was figured using the pigment weight as 100 percent. The mineral spirits used in each formula acted as the carrier for the solute addition agent.

In Series No. 1, we have two positive pigments, prussian blue and lithopone.

In Series No. 2, we have two negative pigments, chrome yellow and carbon black.

In Series No. 3, we have one negative and one positive pigment, chrome yellow negative and drop black positive.

In Series No. 4, we have one negative and one positive pigment, chrome yellow negative and prussian blue positive.

Table 2

Series No. 1

Sample No. 1 (Blank)	
Lithopone	8 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
Mineral spirits	¼ gallon
Sample No. 2	
Lithopone	8 pounds
Prussian blue	½ pound
Alkaline refined linseed oil	1 gallon
0.05% Stearanilide	1.93 grams
Mineral spirits	¼ gallon
Sample No. 3	
Lithopone	8 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
1.0% Ammonium resinate	39.6 grams
Mineral spirits	¼ gallon
Sample No. 4	
Lithopone	8 pounds
Prussian blue	½ gallon
Alkali refined linseed oil	1 gallon
1.3% Rosinanilide	50.5 grams
Mineral spirits	¼ gallon
Sample No. 5	
Lithopone	8 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
2.3% Ammonium stearate	82.8 grams
Mineral spirits	¼ gallon

Table 9

Comparison of Linseed and Chinawood Oils After the Completion of the Test

Varnish.	No.	General appear.	Gloss.	Checking over bare metal.	Checking over primed surf.	Pitting.	Flaking.	Scaling.	Peeling.
C. W. O. Co Sol	1	W	W	W	W	L	W	..	..
	3	W	W	W	—	L	L	..	..
	7	W	W	W	W	W	W	L	..
	10	W	W	W	—	L	—	L	..
Co Lin	1	L	W	W	L	L	L	..	..
	3	L	W	W	L	L	L	..	..
	7	L	W	W	—	L	L	..	..
	10	W	W	W	—	W	W	..	..
Pb Sol	1	..	W	L	W	L	..	..	..
	3	..	W	—	—	L	..	..	..
	7	..	W	W	—	L	..	..	..
	10	..	W	L	W	L	..	..	..
Pb Lin	1	L	L	L	..	L	L	—	..
	3	W	L	—	L	L	L	L	..
	7	L	L	L	W	L	L	—	..
	10	L	L	W	W	L	L	..	..
Mn Sol	1	L	W	W	L	L	W	L	..
	3	L	W	W	—	W	L	—	..
	7	L	W	W	—	L	L	L	..
	10	L	W	W	—	L	L	—	..
Mn Lin	1	W	—	W	W	L	L	L	..
	3	L	—	W	W	L	L	L	..
	7	W	W	W	W	L	W	L	..
	10	L	W	W	W	L	L	L	..
Ratio		8-12	18-4	18-4	10-4	3-21	5-14	0-9	

Sample No. 6

Lithopone	8 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
1.0% Triethanolamine stearate	38.56 grams
Mineral spirits	¼ gallon

Series No. 2

Sample No. 7

(Blank)

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
Mineral spirits	¼ gallon

Sample No. 8

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
0.05% stearanilide	1.39 grams
Mineral spirits	¼ grams

Sample No. 9

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
0.5% ammonium resinate	13.2 grams
Mineral spirits	¼ gallon

Sample No. 10

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
0.5% rosinanilide	13.7 grams
Mineral spirits	¼ gallon

Sample No. 11

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
0.5% ammonium stearate	14.2 grams
Mineral spirits	¼ gallon

Sample No. 12

Light chrome yellow	6 pounds
Carbon black	⅛ pound
Alkali refined linseed oil	1 gallon
2.0% Triethanolamine stearate	55.57 grams
Mineral spirits	¼ gallon

Series No. 3

Sample No. 13

(Blank)

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
Mineral spirits	¼ gallon

Sample No. 14

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
0.05% stearanilide	1.39 grams
Mineral spirits	¼ grams

Sample No. 15

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
1.0% Ammonium resinate	32.5 grams
Mineral spirits	¼ gallon

Sample No. 16

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
1.1% rosinanilide	35.3 grams
Mineral spirits	¼ gallon

Sample No. 17

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
0.9% Ammonium stearate	26.8 grams
Mineral spirits	¼ gallon

Sample No. 18

Light chrome yellow	6 pounds
Drop black	1 pound
Alkali refined linseed oil	1 gallon
2.0% Triethanolamine stearate	63.50 grams
Mineral spirits	¼ gallon

Series No. 4

Sample No. 19

(Blank)

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
Mineral spirits	¼ gallon

Sample No. 20

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
0.05% Stearanilide	1.47 grams
Mineral spirits	¼ gallon

Sample No. 21

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
1.0% Ammonium resinate	28.4 grams
Mineral spirits	¼ gallon

Sample No. 22

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
1.0% rosinanilide	27.6 grams
Mineral spirits	¼ gallon

Sample No. 23

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
0.7% Ammonium stearate	20.8 grams
Mineral spirits	¼ gallon

Sample No. 24

Light chrome yellow	6 pounds
Prussian blue	½ pound
Alkali refined linseed oil	1 gallon
1.0% Triethanolamine stearate	20.48 grams
Mineral spirits	¼ gallon

Testing the samples for drying and floating properties.

Each paint sample was thoroughly stirred and flowed on a clean, polished steel panel and allowed to hang in a vertical position to drain and dry.

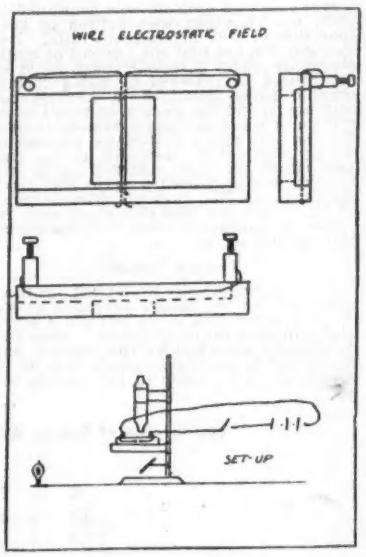
The panels were carefully observed for any visible floating effects, and the final gloss and the time required for drying was noted.

The determination of the nature of electrical charges on the pigment particles in the paint samples.

The "Wire Electrostatic Field" (see No. 2 drawing) was mounted on the table of a chemical microscope. The two wires of the field to be observed under the microscope were two millimeters apart, and did not touch each other. One wire was attached to the positive pole of five "B" batteries in series and the other wire was attached to the negative pole.

A single pole knife switch was placed in the circuit to facilitate exciting the field without moving the sample under observation. The total voltage available at the electrostatic field, taking into consideration voltage drops, was 200 volts D. C.

The objective of the microscope was 16 mm. 0.25 and the ocular was 10. This



No. 2 Drawing

combination gave a magnification of 100 diameters. The microcamera was mounted on a stand in a vertical position such that it could be swung over the microscope ocular.

Care was taken to use exactly the same procedure in mounting the sample for observation under the microscope The wires in the electrosatic field were carefully cleaned each time and a clean glass slide was placed directly under these wires. If there was any danger of placing a static electrical charge on the glass slide by rubbing when cleaning, the slide was grounded to eliminate such a charge before using.

The paint sample was thoroughly stirred with a spatula and one drop was placed between the wires of the field on the glass slide. A mechanical feed carbon arc lamp was turned on and the beam of light was directed down onto the paint sample at an angle of thirty degrees. This method of lighting caused the paint sample to reflect all the light up through the microscope and the specimen appeared in its natural colors.

The reflecting mirror of the microscope could not be used to transmit the arc lamp beam up through the microscope because the pigment particles would all appear black in a white background. Therefore, reflected light was used throughout the work because it was necessary to distinguish the different pigment particles in each sample.

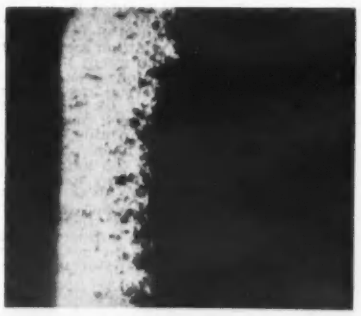
The sample was observed under the microscope to be uniformly mixed and the voltage was then turned on and allowed to act on the sample until no further action was noted. The microcamera was then swung over the microscope ocular and the image was focused on the ground glass. A "Wratten M" photographic plate was then substituted for the ground glass and exposed. The plate was developed and picture printed in the regular photographic manner.

Each of the twenty-four samples was investigated under the microscope and photographed. The results of this investigation and each picture will be described separately. All of the microphotographs are 100 diameters magnification.

Figure 1 confirms the previous work that states that both prussian blue and lithopone particles are positively charged. All the pigment particles are shown to be attracted to the negative wire as a dark blue mass.

Series No. 1

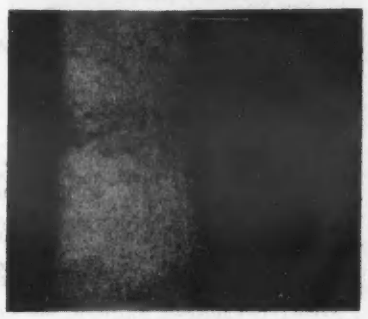
Figure 1 (Sample No. 1)



Positive Wire Negative Wire
After 200 Volts D. C. for 6 Hours

The white at the positive wire is caused by light shining on the slide where the pigment concentration is low. This proves that the sample contains mostly positively charged particles of prussian blue and lithopone when no addition agent is present.

Figure 2 (Sample No. 2)



Positive Wire Negative Wire
After 200 Volts D. C. for 16 Hours

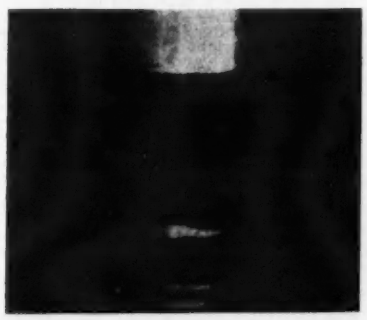
Figure 2 shows a mixture of prussian blue and lithopone particles floating as a mass clinging to the negative wire. The white portion of the picture shows the absence of pigment particles near the positive wire. The amount of stearanilide used as an addition agent was not large enough to have any effect on the electrical charges on the pigment particles and the charges remained positive in the prussian blue and lithopone particles.

Figure 3 (Sample No. 3)

Positive Wire Negative Wire
After 200 Volts D. C. for 3 Hours

Figure 3 shows an intimate mixture of prussian blue and lithopone particles evenly distributed between the two wires. In some parts of the field the particles arranged themselves in the form of rungs of a ladder between the wires. However, there were more pigment particles adhering to the negative wire than to the positive wire. The ammonium resinate, used as the addition agent, reduced the positive charges on the lithopone and prussian blue particles and the particles shown in the figure have an electrical charge approaching zero.

Figure 4 (Sample No. 4)



Positive Wire Negative Wire
After 200 Volts D. C. for 3 Hours

Figure 4 shows an intimate mixture of prussian blue and lithopone particles evenly distributed between the two wires as a ladder effect. The rosinanilide, used as an addition agent, reduced the positive charge on the particles of both pigments. The pigments floated on the surface between the wires as large dark masses.

Figure 5 (Sample No. 5)

Positive Wire Negative Wire
After 200 Volts D. C. for 6 Hours

Figure 5 shows large white aggregates of lithopone speckled with prussian blue particles floating freely on the surface at a mid-point between the wires. Neither of the pigments gathered to any extent at either wire. This indicates that the positive charge on both pigments has been reduced to zero.

The positive wire repelled the floating masses and sent them to neutral center

Figure 6 (Sample No. 6)

Positive Wire Negative Wire
After 200 Volts D. C. for 19 Hours

when the switch was turned on. Therefore, the electrical charge on the pigment particles has been neutralized but not reversed by ammonium stearate.

Figure 6 shows large masses of lithopone mixed with prussian blue floating on the surface at a point midway between the two wires. The electrical charge on these pigment masses has therefore been neutralized. Dark blue particles can be seen adhering all along the positive wire. The electrical charge on the prussian blue particles has been reversed from positive to negative. The charge on the lithopone particles has been reduced to zero by triethanolamine stearate.

Series No. 2

Figure 7 (Sample No. 7)

Positive Wire Negative Wire
After 200 Volts D. C. for 22 Hours

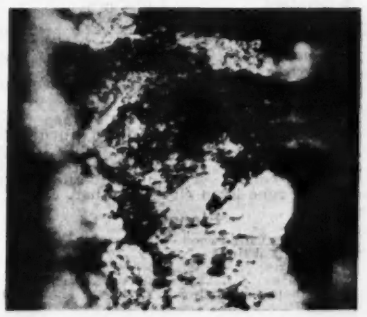
Figure 7 shows a large white mass of chrome yellow speckled with carbon black particles floating on the surface and clinging to the positive wire. A few carbon black particles can be seen adhering to the negative wire.

The particles of chrome yellow have negative electrical charges which confirms the results of previous work.

The carbon black particles gathered between the wires at one end of the field. This would indicate that the carbon black particles have a slight positive electrical charge which is contrary to the results of previous investigations.

Figure 8 shows chrome yellow particles appearing as white masses intimately mixed with carbon black particles, and evenly distributed throughout the field.

Figure 8 (Sample No. 8)



Positive Wire Negative Wire
After 200 Volts D. C. for 5 Hours

Both pigments could be seen adhering to each of the wires.

The chrome yellow particles appeared to be more fluffy or feathery after mixing with stearanilide, and they were a dirty yellow color as though each particle of chrome yellow had been partially covered with carbon black particles.

The stearanilide appeared to have neutralized the electrical charge on both pigments.

Figure 9 (Sample No. 9)

Positive Wire Negative Wire
After 200 Volts D. C. for 18 Hours

Figure 9 shows a large crust of chrome yellow evenly speckled with carbon black particles adhering to the negative wire. This was the appearance of one-third of the field.

In the remainder of the field the large chrome yellow aggregates, floating on the surface, extended across the width of the field touching both wires.

The ammonium resinate reversed the electrical charge on the chrome yellow particles from negative to positive.

Figure 10 (Sample No. 10)

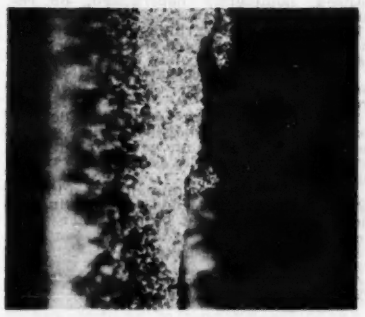
Positive Wire Negative Wire
After 200 Volts D. C. for 7 Hours

Figure 10 shows dark carbon black particles intimately mixed with the light colored chrome yellow particles and evenly distributed from one wire to the other.

Some small chrome yellow aggregates can be seen adhering to the negative wire.

The electrical charge on both pigments has been reduced, and on some of the chrome yellow particles, the charge has been reversed from negative to positive by the rosinanilide.

Figure 11 (Sample No. 11)

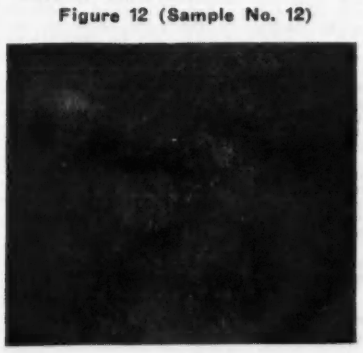


Positive Wire Negative Wire
After 200 Volts D. C. for 6 Hours

Figure 11 shows large aggregates of chrome yellow speckled with carbon black particles floating on the surface and adhering to the positive wire. In other parts of the field chrome yellow particles adhered to the negative wire but not to a very great extent.

The ammonium stearate probably reduced the electrical charge on some of the chrome yellow particles and reversed the charge on only a few.

Figure 12 (Sample No. 12)

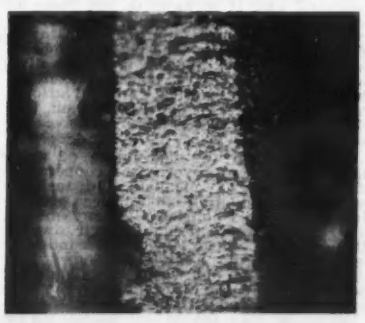


Positive Wire Negative Wire
After 200 Volts D. C. for 17 Hours

Figure 12 shows chrome yellow aggregates intimately mixed with carbon black floating on the surface evenly distributed throughout the field and adhering to both wires.

Series No. 3

Figure 13 (Sample No. 13)



Positive Wire Negative Wire
After 200 Volts D. C. for 6 Hours

The triethanolamine stearate neutralized the electrical charges on some particles and reversed the charges on other particles.

Figure 13 shows a large light colored crust of chrome yellow particles evenly dotted with drop black particles adhering to the positive wire. A small quantity of drop black particles can be seen adhering as a dark mass to the negative wire.

The electrical charge on the chrome yellow particles is negative and the charge on the drop black particles is positive, which confirms the results of previous investigations when an addition agent is not used.

Figure 14 (Sample No. 14)

Positive Wire Negative Wire
After 200 Volts D. C. for 19 Hours

Figure 14 shows aggregates of chrome yellow evenly mixed with drop black floating as dark masses and adhering to both wires. However, more of these aggregates adhered to the positive wire. A few particles of drop black can be seen clinging to the negative wire.

The stearanilide gave the chrome yellow particles a very fluffy or feathery appearance which seemed to be a characteristic reaction whenever this addition agent was used.

The electrical charges on the pigment particles were not reduced to a very great extent, probably due to the fact that it was impossible to incorporate more than one-fifieth the theoretical amount of addition agent into the paint sample due to the tremendous jelling power of the stearanilide.

Figure 15 (Sample No. 15)

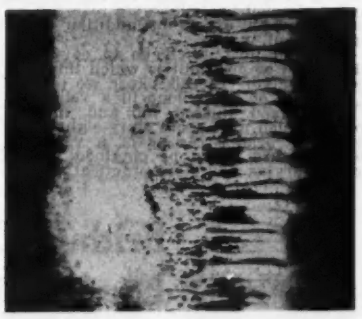
Positive Wire Negative Wire
After 200 Volts D. C. for 2 Hours

Figure 15 shows a large mass of light colored chrome yellow particles clinging to the positive wire. This mass appeared very bright yellow and was not mixed with particles of drop black, but floated on the surface.

Underneath the surface, a mass of chrome yellow intimately mixed with drop black covered the entire field, touching both wires.

The ammonium resinate had very little effect on the electrical charges on the pigments, probably due to the fact that it was decomposed during the grinding of the sample.

Figure 16 (Sample No. 16)



Positive Wire Negative Wire
After 200 Volts D. C. for 2 Hours

Figure 16 shows particles of light colored chrome yellow forming a parallel row of cones adhering to the negative wire. The particles of drop black can be seen gathered at the mid-point between the wires.

In other parts of the field the chrome yellow cones extended from one wire to the other, and formed a ladder effect. Where this occurred the drop black particles gathered at a distance from the positive wire about one-fifth the total distance between wires.

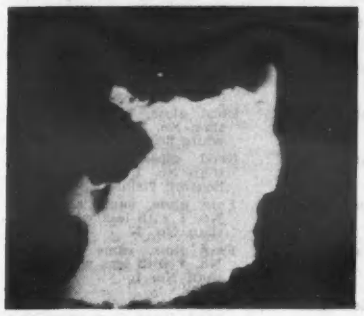
The charge on the chrome yellow particles seems to be reversed from negative to positive by the rosinanilide. Some of the drop black particles have an electrical charge of zero, and others seem to be almost reversed from positive to negative.

Figure 17 shows a dark intimate mixture of chrome yellow and drop black particles adhering as dark colored masses to both wires. The photograph was taken where the pigment concentration was low. The remainder of the field was a solid mass of pigment.

The ammonium stearate had very little effect on the electrical charges on the pigment particles, probably due to the fact that it was decomposed during the grinding of the sample.

Figure 18 shows large crusts of chrome yellow intimately mixed with drop black

Figure 17 (Sample No. 17)



Positive Wire Negative Wire
After 200 Volts D. C. for 17 Hours

floating on the surface and adhering to the negative wire. Drop black particles can also be seen clinging all along the positive wire.

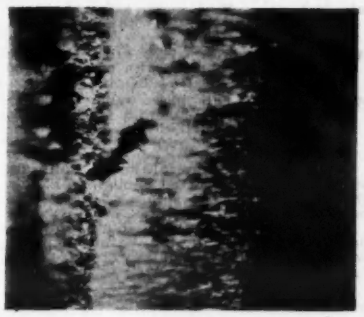
The triethanolamine stearate has definitely reversed the charge on the chrome yellow particles from negative to positive, and the charge on the drop black particles from positive to negative.

Figure 18 (Sample No. 18)

Positive Wire Negative Wire
After 200 Volts D. C. for 4 Hours

Series No. 4

Figure 19 (Sample No. 19)

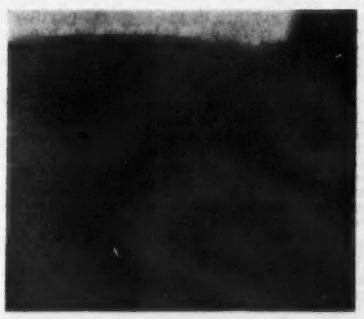


Positive Wire Negative Wire
After 200 Volts D. C. for 18 Hours

Figure 19 shows a light colored yellowish green mass of chrome yellow particles adhering to the positive wire, and the much darker prussian blue particles adhering to the negative wire. The prussian blue was partially soluble in the vehicle and made the chrome yellow appear as light green colored particles.

When an addition agent is not used the chrome yellow has a negative electrical charge, and the prussian blue has a positive electrical charge, which confirms the results of previous investigations.

Figure 20 (Sample No. 20)



Positive Wire Negative Wire
After 200 Volts D. C. for 5 Hours

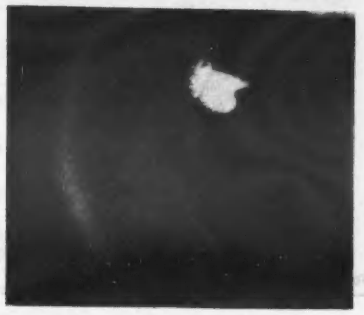
Figure 20 shows a large crust of chrome yellow dotted with particles of prussian blue and floating as a dark colored mass all along the positive wire. Particles of prussian blue adhered all along the negative wire and were distinguished by their deep blue color.

The stearanilide had very little effect on the electrical charges present on the pigment particles, probably due to the fact that only one-fiftieth of the theoretical amount of addition could be used due to its tremendous jelling power.

Figure 21 shows a very decided example of floating. The chrome yellow particles formed a bright yellow crust adhering to the positive wire, and the prussian blue particles collected along the negative wire, producing a deep blue color.

The ammonium resinate did not seem to have any effect on the electrical charges on the pigment particles, and the sample floated very badly, probably due to the fact that the addition agent was decomposed during the grinding of the sample.

Figure 21 (Sample No. 21)



Positive Wire Negative Wire
After 200 Volts D. C. for 18 Hours

Figure 22 shows chrome yellow intimately mixed with prussian blue adhering to both wires and extending across the field. The chrome yellow had a slightly

Figure 22 (Sample No. 22)

Positive Wire Negative Wire
After 200 Volts D. C. for 41 Hours

greater tendency to adhere to the positive wire when it floated to the surface. The prussian blue remained at the bottom and formed blue streaks from one wire to the other. The prussian blue seemed to be

Figure 23 (Sample No. 23)

Positive Wire Negative Wire
After 200 Volts D. C. for 3 Hours

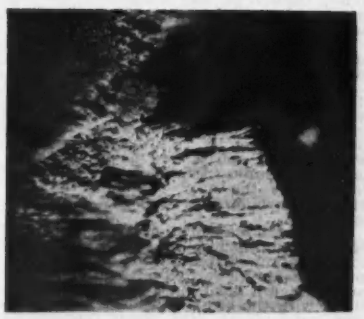
attracted more to the negative wire, although some particles adhered to the positive wire.

The rosinanilide reduced the charges on both pigments and reversed the electrical charges on a few of the particles of both pigments. The charge on the prussian blue particles seemed to be reversed more than the charge on the chrome yellow particles.

Figure 23 shows chrome yellow particles floating on the surface as large aggregrates. They were a bright yellow color and not mixed with prussian blue very much. The prussian blue remained at the bottom as a deep blue color which seemed slightly more concentrated at the negative wire.

The ammonium stearate seemed to have reduced the charges on both pigments to very nearly zero. The chrome yellow floated badly on the surface, but seemed evenly distributed between the two wires.

Figure 24 (Sample No. 24)



Positive Wire Negative Wire
After 200 Volts D. C. for 2 Hours

Figure 24 shows chrome yellow particles forming cones from the positive wire, and in some parts, extending across the field. The deepest blue color was along the negative wire.

The triethanolamine stearate seemed to reduce the electrical charges on both pigments because the migration of the particles was not so pronounced.

The following table (Table 3) will give a complete description of each of the twenty-four samples made during the performance of the drying tests.

Table 3

Sample number.	Drying time (hours).	Addition agent.	Effect on pigment charge.	General appearance of film, including gloss, color and floating tendency.
Series No. 1				
1	68	None	Blank sample	Good gloss, light blue shade with a slight amount of white float.
2	68	Stearanilide	Partially neutralized	Fair gloss, same shade as No. 1 with a slight amount of white float.
3	68	Ammonium resinate	Partially neutralized	Good gloss, slightly deeper than No. 1 shade with less white float than No. 1.
4	68	Rosinanilide	Partially neutralized	Good gloss, much deeper than No. 1 shade with no floating visible.
5	68	Ammonium stearate	Completely neutralized	Fair gloss, same shade as No. 1 with less white float than No. 1.
6	68	Triethanol-amine stearate	Neutralized and partially reversed	Fair gloss, same shade as No. 1 with less white float than No. 1.
Series No. 2				
7	68	None	Blank sample	Poor gloss, yellowish green shade with float appearing as mottled design.
8	68	Stearanilide	Partially neutralized	Poor gloss, deeper green than No. 7 with same float design as No. 7.
9	68	Ammonium resinate	Neutralized and partially reversed	Poor gloss, same shade as No. 7 with less float design than No. 7.
10	68	Rosinanilide	Neutralized and partially reversed	Poor gloss, deeper green than No. 7 with same float design as No. 7.
11	132	Ammonium stearate	Partially neutralized	Poor gloss, same shade as No. 7 with same float design as No. 7.
12	80	Triethanol-amine stearate	Neutralized and partially reversed	Fair gloss, darkest green in this series, with same float design as No. 7.
Series No. 3				
13	68	None	Blank sample	Fair gloss, yellowish green shade with slight float of mottled design.
14	68	Stearanilide	Partially neutralized	Fair gloss, lighter shade than No. 13 with same float design.
15	68	Ammonium resinate	Partially neutralized	Fair gloss, lighter shade than No. 13 with same float design.
16	68	Rosinanilide	Neutralized and partially reversed	Fair gloss, darker shade than No. 13 with worse floating.
17	106	Ammonium stearate	Partially neutralized	Poor gloss, same shade and float as No. 13.
18	68	Triethanol-amine stearate	Completely reversed	Fair gloss, same shade as No. 13 with worse floating.
Series No. 4				
19	68	None	Blank sample	Fair gloss, medium green shade with pronounced blue float.
20	68	Stearanilide	Partially neutralized	Fair gloss, same shade as No. 19 with slightly less float.
21	68	Ammonium resinate	Partially neutralized	Fair gloss, same shade as No. 19 with slightly less float.
22	68	Rosinanilide	Partially neutralized	Poor gloss, same shade as No. 19 with slightly less float.
23	68	Ammonium stearate	Completely neutralized	Fair gloss, same shade as No. 19 with practically no float.
24	68	Triethanol-amine stearate	Partially neutralized	Fair gloss, same shade as No. 19 with practically no float.

The time is given in hours required for each paint film to dry to the same hardness when flowed on steel panels and allowed to hang in a vertical position.

Under the description of the appearance of the dry film an attempt was made to describe the intensity of the color or the varied color effects produced by the pigments, in an effort to show the type and extent to which each pigment floated.

Discussion

All twelve pigments adsorbed the various solutes from mineral spirit solutions. Some pigments adsorbed a large amount of each solute, and other pigments adsorbed only small amounts of each solute.

The adsorption values of the different pigments varied widely when acidic solutes such as stearic acid, linseed oil, fatty acids, rosin, were used.

When more basic solutes such as ammonium stearate or stearanilide were used the adsorption values for the different pigments did not vary so widely.

Basic salts of rosin such as ammonium resinate or rosinanilide exhibited adsorption values similar to the values obtained when rosin was used.

Linseed oil exhibited higher adsorption values, for the various pigments, than the other solutes. This is probably explained by the fact that the apparent adsorption included a large amount of absorption.

Prussian blue and drop black had the highest adsorption values for each solute used. Carbon black had medium adsorption values for each solute used. Para toner, titanox-B, and titanox-C, had the lowest adsorption values for each solute used.

The adsorption values do not depend in any definite manner on the specific gravities of the pigments.

If a pigment was found to be even slightly soluble in mineral spirits this fact was taken into account when residues were weighed and the necessary correction was made by treating the pigment with mineral spirits and using this mixture as a blank. Prussian blue and para toner were the only pigments that exhibited a measurable solubility in mineral spirits.

After the adsorption reaction had reached equilibrium in every case, with the exception of stearanilide as the solute, the pigments all settled out rather rapidly and formed a hard mass of very fine particles with the clear solution above. This was particularly true when rosinanilide was used as the solute. When stearanilide was used as the solute the pigments had the following appearance after the adsorption reaction had reached completion:

Mapico Red Oxide—formed small balls.
Titanox-C— very light and fluffy.
Ferrite yellow— very light and fluffy.
Titanium Dioxide— settled out hard and coarse.
Lithopone— settled out fluffy.
Drop black— settled out hard.
Carbon black— settled out fluffy.
Prussian blue— settled out fluffy.
Chrome yellow— very light and fluffy.
Titanox-B— very light and fluffy.
Graphite— settled out fairly hard.
Para toner— very light and fluffy.

None of the mineral spirit solutions were made concentrated enough to exceed the solubility of the solute at room temperature.

The electrical charges found to exist on the particles of the paint pigments when no addition agents were used are as follows:

Pigment.	Nature of Charge.
Lithopone	+
Prussian blue	+
Light chrome yellow	−
Carbon black	±
Drop black	+

With the exception of carbon black the above results confirm the results of previous work by other investigators. The discrepancy shown by carbon black has been carefully checked.

The carbon black particles used in this work definitely migrated to the negative wire to a small extent showing they possessed, at least, a small positive charge on their surface.

It is believed by the writer that if enough of each addition agent was added to satisfy the theoretical adsorptive capacity of the total amount of pigment in each sample, the electrical charges present on the surface of the pigment particles would be removed, or in other words, neutralized, because of the protective coating of addition agent adsorbed on the surface of all the pigment particles.

The theoretical amount of each addition agent adsorbed by the amount of pigment present in each sample was calculated from the results of the adsorption work in this paper. The amount of addition agent actually added to each sample was known so that the effect produced by adding greater or less quantities of the addition agent, than theoretically required, could be studied.

When stearanilide was used as the addition agent it had almost no effect on the electrical charges existing on the pigment particles because much less than the theoretical amount of stearanilide was used than was necessary to satisfy the adsorption in each case.

Sample No. 1 was thoroughly mixed with the theoretical amount of stearanilide necessary to satisfy adsorption (99.95 grams per gallon) and examined in the electrostatic field. The particles of lithopone appeared very fluffy and feathery and were evenly mixed with prussian blue particles. Both pigments adhered to the positive wire showing their positive charges had been reversed to negative.

The heat of friction encountered in grinding might have caused the decomposition of ammonium stearate and loss of ammonia. This would account for the failure to neutralize the electrical charges, and the results obtained for sample No. 11.

When ammonium resinate was used as the addition agent the results were similar to those obtained when ammonium stearate was used. The ammonium resinate was probably decomposed from the heat produced when the samples were ground. This would account for the results obtained for samples Nos. 15 and 21.

To determine if the ammonium stearate was decomposed from the heat of grinding, sample No. 1, containing no addition agent, was mixed only by stirring with the theoretical amount of ammonium stearate. When this sample was observed in the electrostatic field, it was found to contain large aggregates of lithopone intimately mixed with prussian blue, adhering to the positive wire slightly more than the negative wire, showing that the charges on both pigments were neutralized and slightly reversed from positive to negative. These results check sample No. 5 and confirm the idea that ammonia was lost from the ammonium stearate during the grinding process.

A check was made on sample No. 11 by thoroughly stirring the theoretical amount of ammonium stearate into sample No. 7 containing no addition agent. The tendency of the chrome yellow to migrate to the positive wire and the carbon black to migrate to the negative wire was reduced or slowed down as though the charges on the particles had been partially neutralized. This would indicate a slight loss of ammonia during the grinding of sample No. 11.

When sample No. 17 was checked by stirring the theoretical amount of ammonium stearate into sample No. 13 containing no addition agent, the charges on both pigments seemed to be partially neutralized the same as reported for sample No. 17 indicating that ammonia had not been lost during the grinding of sample No. 17.

Sample No. 15 was checked by stirring the theoretical amount of ammonium resinate into sample No. 13. The charges on the pigment particles were not reduced to any extent showing that ammonia had not been lost during the grinding of sample No. 15. An amount of ammonium resinate exceeding the theoretical amount was then stirred into sample No. 13, and the charges on the particles were partially neutralized. This might indicate that the adsorption of the solute onto the pigment particles in sample No. 15 had not been complete.

Sample No. 21 was checked by stirring the theoretical amount of ammonium resinate into sample No. 19 containing no addition agent. The charges on both pigments were reduced showing that the charges had been partially neutralized. This would indicate a loss of ammonia during the grinding of sample No. 21.

No theoretical adsorption data was obtained for triethanolamine stearate during the first part of this work; therefore, this solute could not be used to establish any adsorption theory.

Samples Nos. 11, 12 and 17 required a longer time for drying. This might be accounted for by the fact that they both contain carbon black, which sometimes retards drying.

It is believed that evaporation plays an important part in causing paint pigment particle flotation. The vehicle used in all the samples was alkali refined linseed oil.

When the evaporation rate was increased the pigment particles could be seen moving rapidly in a vortex action. The particles would all come together at the bottom of the film and rise vertically in a vortex to the surface, and then spread out in all directions and sink to the bottom of the film to repeat the action by coming together again at the center.

As an experiment, mineral spirits was added to a few of the samples merely as a thinner to determine the effect of evaporation. This increased the rapidity of the vortex action tremendously and the surface of the film was occupied entirely by moving particles.

In previous work on this subject of floating of pigments we found that the static charges which exist on the pigment particles were not a prime factor in causing floating. In gathering data for this paper it was necessary to determine what charges existed on the pigment particles, but only as a means to an end to determine when enough addition agent had been added. We found that an excess of addition agent would aggravate the floating trouble. As soon as the charges on the pigment particles were reversed we knew that an excess of addition agent was present.

Time did not permit us to cover the whole field of possibilities which this subject presented. In this paper we present the results of work done in a vehicle of alkali refined linseed oil and mineral spirits, which took about sixty-eight hours to dry. Perhaps results of a very different nature would be obtained with a quicker-drying and more practical vehicle.

There was not enough time to take each one of the twenty-four test batches of paint and experiment with them until just the right amount of addition agent was added, although we would have liked to have done it. The results of our work seem to indicate that the paint pigments used did not adsorb the same amounts of addition agent in the linseed oil vehicle as they did in the preliminary work, which was done in a solution of mineral spirits.

Conclusions

1. Paint pigment particles do absorb organic substances from mineral spirit solutions.
2. The adsorption of an organic acid from a solution of mineral spirits varies widely for different paint pigments.
3. The adsorption of a neutral organic substance or a salt of an organic base from mineral spirits does not vary so widely for different paint pigments.
4. The amount of an organic substance adsorbed from mineral spirits for various paint pigments, does not depend in any definite manner on the specific gravities of the pigments.
5. The settling-rates and appearance of some pigments are altered after the particles have adsorbed stearanilide from a mineral spirits solution.
6. Some paint pigments tend to adsorb a large amount of solute from mineral spirits solution regardless of the solute used.
7. Some paint pigments tend to adsorb a small amount of solute from a mineral spirits solution regardless of the solute used.
8. Previous investigations led to the conclusion that a definite charge of static electricity exists on the particles of some paint pigments. This has definitely been confirmed.
9. The electrical charges are found to exist on pigment particles in a paint film of normal pigment concentration.
10. If enough addition agent is ground into the paint as a mineral spirits solution to equal or exceed the theoretical adsorption values for the total amount of pigment present, the electrical charges existing on the particles are partially neutralized, completely neutralized, or reversed.
11. The effect of various addition agents on the electrical charges existing on paint pigment particles depends on the amount of addition agent necessary to satisfy the theoretical adsorption of the pigments present.
12. Certain addition agents are decomposed by the heat produced during grinding, and these addition agents should be merely stirred into the paint after grinding.
13. If the following amounts of addition agents are not exceeded, the drying of the paint film will not be retarded:

0.05% Stearanilide.
2.0 % Ammonium resinate.
2.0 % Rosinanilide.
5.0 % Ammonium stearate.
2.0 % Triethanolamine stearate.

14. If the amounts of addition agents given in conclusion No. 13 are not exceeded, the gloss of the dry paint film will not be decreased.
15. Reduction or reversal of the electrical charges existing on the pigment particles does not always reduce flotation.
16. Some addition agents reduce floating in certain paint samples, but the decrease of flotation is not directly proportional to the effect produced by the addition agent on the electrical charges existing on the pigment particles.
17. The vortex action of the pigment particles in a drying paint film varies inversely as the viscosity of the vehicle.
18. We think that by using addition agents similar to the ones used in the work on this paper, it will be possible to decrease the grinding time necessary for a given paint by increasing the wetting power of the vehicle and decreasing the surface tension of the pigment particle. No work has been done to prove the above statement, but we believe it would lead to some interesting results.
19. We think some work should be done on the elimination of floating troubles from paints ground without any addition agent present, but added later to the finished paint in the form of a mineral spirits solution.
20. We think work similar to that done for this paper should be done, using other pigments and more practical vehicles.

A meeting of the advisory committee was held during dinner in Mr. Sparrow's suite.

Friday, October 27

Third Session, Friday Forenoon

After an hour and a half visiting the exhibits of the Paint Industries Show, the members were called to order at half-past nine o'clock for the third session, consisting of original papers and an address on "Common Sense in the Paint Industry," by Dr. Wilhelm Krumbhaar, of Germany, who is well known to all members of the Federation.

Dr. Krumbhaar's Address

It would seem obvious that common sense should govern the policies of every industry. In spite of this, however, the rule of sound common sense has not by any means been established in every industry and we must confess that even the paint and varnish industry was comparatively slow to adopt the rule of reason.

It is interesting to follow the development of common sense in its influence on commercial activities, as indicated by the formation of trade associations. The most important of these associations, the American, British and German organizations, were founded at about the turn of the century, their growth thus having occupied scarcely more than thirty years. At present these associations have between one and two hundred members; that means that about 75 percent of the entire paint and varnish industry belong to the trade associations. Of course, there are always outsiders who profit from the association work, in spite of being nonmembers, and it is hard to get them to join. There has been everywhere a fairly uniform development in the organization of local sections of the associations in regional districts, and of technical divisions for attention to specialized fields. But we find in America, in the National Paint, Oil and Varnish Association, one which is unique in its comprehensive and model organization.

The belief in the usefulness of association work also governs the cooperation of our industry's chemists and technologists, the production men. These production men's clubs flourish alike in America and England and contribute much towards lifting the technical level of the industry as a whole, and experience shows that the cooperation between chemists and technologists of the different concerns does not sharpen competition within the industry, as was feared by many manufacturers.

The problems confronting the paint and varnish associations are numerous and complex. First of all, it is important to work in conjunction with the authorities, so that, if new laws are made, they may be helpful and not hurtful to the interests of the paint industry, and may be interpreted in a reasonable way. Ques-

tions of taxation are important matters; others have to do with the laws governing accident prevention, fire prevention and industrial hygiene. It is my experience that once in a while manufacturers do not regard these regulations as seriously as they should. In case of a serious accident the whole industry is subjected to new regulations so that all have to suffer for the faults of the individual.

Opportunity in Patent Work

Useful work is done by trade associations on problems of freight rates and tariffs, and furthermore on patent matters. There is no doubt that much could be accomplished for the general good in opposing blocking patents, which are too broad in nature and very often prove a real hardship to our industry.

Guarantees and specifications comprise a field in which common sense has not yet achieved full sway and in which there is still much conflict of opinion. It is still common enough to give guarantees in cases in which no guarantee could properly be given, and it is well known that specifications, no matter how carefully worked out their details may be, cause much trouble to the producer as well as to the user of the materials.

Needless to say, co-operative advertising is a very useful activity, in our trade; but only America has a really comprehensive organization for this purpose. The work of credit inquiry bureaus, however, is quite generally recognized. These departments do much valuable work by exchanging and communicating their experiences with debtors, and prevent many losses which would otherwise occur.

The associations perform an important service in their efforts to cut down production costs by simplifying and unifying containers and packages, by decreasing the number of shades, by promoting selling on the volume instead of the weight basis and by other simplification measures.

Still more important is the work of the associations in their efforts to introduce sound practice into cost accounting. It is not easy to educate all manufacturers to proper calculation methods. Much can be accomplished if the manufacturer will have a thorough study made, by an unbiased person, of his production methods and sales organizations. When all the figures from such a study are tabulated and visualized, and perhaps compared with the figures from other similar enterprises, the results will be astonishing and the manufacturer will be in a position to draw many conclusions which will be helpful in correct calculation.

Undoubtedly, the climax in the application of common sense to commercial activities is the creation of a real "code of ethics"; in fact, common sense is identical with sound business ethics. We all know that the associations in our industry have done much in this direction, especially in the fight against unfair competition and commercial bribery.

Slower Scientific Progress

The progress of common sense has been slower in the scientific than in the commercial field. It took a very long time for real scientific institutes to be formed in the industry. Dr. H. A. Gardner in Washington was far ahead of all others, England and Germany following suit much later, and several other countries more recently. These institutes are financed either by the industry alone, or with government aid. Usually the suppliers of raw materials, partly finished goods and equipment also help by contributing a substantial portion of the cost. The difficulty in conducting paint institutes lies in steering the proper middle course between science and practice, while at the same time being diplomatic enough to keep all the supporting members happy, each after his own fashion.

It is of the greatest importance that the laboratories of our industry should all be working upon the same carefully standardized methods of analysis and tests for physical properties. As a matter of fact, the American industry leads the world in this direction as it has available a book, known as "Physical and Chemical Examination of Paint, Varnishes, Lacquers and Colors," by Dr. Henry A. Gardner, which has just appeared in the sixth edition, including 1,500 pages. This book is used not only in this country but practically in every country of the world.

There is no doubt that the growth of the scientific institutes in the paint and varnish industry is a striking proof of the victory of common sense. All the achievements of science in our industry were impressively visualized by the exhibition of the British Paint Research Station in the Summer, 1933, at Teddington. The details of the exhibit, test methods as well as completed scientific-technical investigations, are interesting to every one of us, and so I will give a brief summary of my observations.

Exact measurement methods are the basis of all correct manufacturing practice and this, of course, is the basis for getting away from all complaints from customers. Among the measuring instruments, probably the most important are viscosimeters and plastometers; among them the simplest designs, e. g., the Gardner-Holdt viscosity tubes, the Mobilometer and the Ford cup, are still the best for practical purposes.

Pigment-Vehicle Relations

The exhibit's visual presentation of the manifold peculiar relations between pigment and vehicle were highly instructive. Most pigments, such as lithopone, titanium white, ultramarine, etc., can be ground to a stiff paste in paraffin oil. But if only a few drops of blown oil are added, the paste at once becomes as thin as water. The remarkable relation of linseed oil to white lead was demonstrated in two funnels, containing aqueous white lead pastes. In one funnel the paste was covered over with a layer of acid oil, in the other with neutral oil. Water very soon begins to flow from the first one, while in the second funnel containing neutral oil as the top layeer, the bottom remains entirely dry.

Measurements of gloss of surfaces sometimes is important; it is simply done visually by comparing the intensities of specular reflection of light from a standard surface and from the surface being tested. When the more modern photoelectric cell is used, galvanometer deflections indicate the intensity differences in the reflected light.

The microscope always serves well in the evaluation of paint surfaces. Thus, some photomicrographs showed the deformation of a film surface into pits or wrinkles, or both, by action of a moist atmosphere soon after application. Other photomicrographs showed a crystalline deposit of ammonium sulfate which may form on varnish or nitrocellulose lacquer films if the surrounding atmosphere is contaminated with products of combustion.

The photomicrographic method has also been found very suitable for measuring particle size of pigments. The best medium for microscopic dispersion is proved to be a solution of 90 parts lanolin and 10 parts rosin in carbon tetrachloride. Micrography is also well adapted to examination of the properties of the paint film itself. For example photomicrographs were shown of a composite paint film containing a considerable quantity of foreign matter.

Methods of color measurement form a speciality of the British Paint Research Institute; colors are measured by the Guild tricromatic colorimeter in terms of their content of the three primary spectral colors, red, green and blue, and in terms of their brightness relative to that of a magnesium oxide screen under standard conditions of illumination. All these measurements are accurate and reproducible.

Various methods were displayed for determining the hiding power and relative strength of pigments. Relative strength of white pigments is measured by mixing a weighed sample with ultramarine, both being in the form of an oil paste, the ultramarine being of very fine and uniform particle size. The method is well suited to bringing out clearly small differences in brightness of different lithopones, thus being useful for production control work.

Color and Fading Tests

The methods described are also used to study changes in shade, especially the phenomena of fading, darkening and bronzing.

Fading tests are always made in a damp atmosphere with exposure to the light of an intense carbon arc. Colorimetric measurements have given valuable results in such tests. The thinner the paint film, the faster it fades. Pigments which have been ground in stand oil as the vehicle bleach more rapidly and to a greater extent than those made up with silicon ester or with gelatin solutions, The fastness of pigments to light depends a great deal on the white extenders; the most permanent mixtures as a rule are those with barium sulphate, closely followed by those with zinc oxide, while light fastness is poor in mixtures with alumina and especially with titanium dioxide.

Darkening of pigments is sometimes conveniently tested under the unscreened mercury vapor lamp; this test showed, for example, very severe darkening of chrome yellow in gelatin. If the light of the mercury vapor lamp is filtered through a glass plate containing colloidal silver or nickel, it can be used for testing the light-fastness of lithopone. Lithopone which will darken in the light then shines with intense fluorescence whereas light fast lithopone is not fluorescent.

Of course, many devices have been designed for measuring the drying of paint films. To be reliable, such measurements must be made in rooms in which the temperature and humidity are kept constant; the British Institute is very fully equipped in this respect.

Mention may be made here of a method which is suitable for determining turpentine vapor in the air of rooms in which painting is being done. A known volume of the air, measured in a gasometer, is drawn through a glass coil immersed in ether carbon dioxide snow. The condensed turpentine is washed out of the coil with alcohol and an aliquot portion is added to an equal volume of a 1 percent solution of vanillin in concentrated hydrochloric acid. The blue color produced on standing for forty minutes is compared with a set of standards containing a known amount of turpentine. It was found that the turpentine concentration in the air was always less than 1 mg. per liter, while at least 5 mg. per liter is necessary to cause headaches, etc.

The constant temperature-humidity room contains all the instruments for measuring the mechanical and physical properties of films. As is well known, there are many different designs for this. For hardness tests the Walker swinging beam apparatus is very suitable; for testing elasticity, elongation and tensile strength the designs developed by the American Paint and Varnish Research Institute proved to be very useful.

Artificial Weathering

For artificial weathering two tanks are used to study the probable behavior of materials; one simulates indoor, the other outdoor service conditions. They operate either with alternate exposure to light, water and heat, or only with temperature alterations. It has been found in general that the results of accelerated weathering tests agree best with natural tests when the testing apparatus is arranged as simply as possible; as a rule sulphur dioxide should be used only with the greatest possible caution, because the destructive effect is too severe.

Many examples of tests by natural exposure were also shown. The results of such tests vary according to the location and the direction of the exposed panels. Coatings exposed at an angle of 45° were destroyed two to four times as fast as those standing vertical; moreover, coatings on surfaces facing north were destroyed much less rapidly than those facing south. There are also wide differences in behavior according to the kind of coated surface, whether wood, iron or stone, and according to the structure of the paint film as a whole.

Composition of the results of natural weathering with those of artificially accelerated tests revealed complete agreement in only about two-thirds of the cases, but a looser or more qualitative agreement in a much higher proportion.

Some of the weathering results may be mentioned here. In the comparison of various oils as vehicles, linseed stand oil and linseed varnish oil have proved themselves superior to perilla and poppy seed oils; fish oil was inferior in stability, as was particularly proved in a series of tests with white lead as the pigment.

Regarding the influence of priming on the service life of the coating the best results were obtained with undercoats of the same composition as the topcoat, only more heavily pigmented. The so-called "trimetal primer" consisting of red lead with additions of zinc dust and aluminum powder, had no special advantages. White lead was superior to red lead for undercoats on wood.

The quality of white lead topcoats was increased by adding zinc white, but lessened by adding barytes or paris white. It is a striking fact that scarcely any difference could be detected in the effects of barytes and of paris white. Lithopone paints were greatly improved by the addition of 2 to 5 percent of aluminum powder. The barium sulphate content of titanium pigments had no definite influence on the chalking of these pigments.

Antimony pigments gave good results, but were subject to the rule which also applies to other cases, that a non-chalking paint film turns quite yellow.

Red lead had been tried in paints for topcoats; it was not found suitable for such use, showing fading and flaking. At the same time these paints showed that ordinary red lead is superior to the non-setting variety in topcoats.

Paints in which the pigment was treated with a 0.5 percent aluminum stearate solution as dispersing agent, were not improved to any extent by this treatment.

Scientific-Technical Investigations

Besides the test methods used in our industry a number of completed scientific-technical investigations were demonstrated at the exhibit.

Extracted stand oils were made in England several years ago, a counter-current solvent extraction process being used, and a good quality product was sold, samples of which were exhibited. Varnishes made from an extracted stand oil and an esterified natural gum showed excellent durability and water resistance.

Interesting investigations have been made of the reaction between lead oxide and linseed oil. Litharge reacts with linseed oil to form an additive complex, which contains up to 60 percent litharge. It has been clearly shown that these complex compounds are not soaps, and that these very compounds are the real driers, whereas as a rule lead soaps are poor driers and give poor films.

Much scientific and technical work on tung oil has been done and has cleared up many points which were heretofore obscure. It has been shown, f. i., that the glycerol is quantitatively recoverable at all stages of polymerization, that the acids liberated by saponifying the gel have molecular weights which may approach, but rarely exceed, twice that of the acids in the unpolymerized oil. These acids are dibasic, and yield by oxidation azelaic and valeric acids in exactly the proportions given by eleostearic acid.

In addition to polymerization, isomerization of tung oil has been studied. The degree of isomerization can be determined by diluting the sample with a standard proportion of acetone at 0°C and filtering off the residue. The relative stabilities of variously treated tung oil samples may be compared by daylight exposure on a slowly rotating table. Comparison of the isomers produced under various conditions has shown that the material formed in daylight differs from that of the spontaneously isomerized solvent-extracted oils. This is proved by the production of the corresponding acids, melting at 68°C and 71°C respectively, and from them the p-bromophenacyl esters, melting at 74°C and 80°C.

Tung Oil and Maleic Acid

Some samples exhibited, directed the attention to the remarkable combination of tung oil with maleic acid; the investigations showed that beta-eleostearin can be condensed with maleic anhydride to a useful product giving heat-hardening films suitable for varnishes.

The modern field of scientific and technical research included the better processing and utilization of natural resins and if properly developed, this special field shows promise of abundant reward, especially with regard to the processing of copal gums. The British Institute intends to devote particular attention to further advancement in the chemistry of shellac.

In general, synthetic resin problems are left to private industry, indeed the patent literature is covering already the whole field. On the other hand, attention is being given to the theoretical signficance of the processes leading to resinification, and the formulation of synthetic products was illustrated by structural formulas of some substances. Briefly, a modern synthetic resin consists primarily of a series of long chain molecules behaving as a colloidal unit. At a later stage, by processes such as the addition of an element, e. g., oxygen, cross linking of the chains occurs and the irreversible substances are formed.

Some of the work done in England on chrome yellow, iron oxide and lake pigments may be briefly described.

X-ray photographs showed that ordinary lead chromate exists in two crystalline forms. The greenish yellow form initially precipitated is rhombic and slowly changes to a golden yellow monoclinic form, the rate of transformation, while the substance is in the precipitation liquor being increased more by inorganic acids than by acetic acid. The change also occurs in the dry material.

Pale and medium chromes are reddened by alkali, and consequently cannot be used on basic surfaces. A method has been devised for producing medium chromes which have much greater alkali resistance. These chromes can be boiled with 10 percent caustic soda without change of color. The blackening of chromes by light has also been investigated. Acetate chromes are generally far worse than nitrate chromes in this respect, and it has been shown that the effect is due to the presence of adsorbed impurities.

Structure of Iron Oxides

In other studies efforts have been made to ascertain the structure of the iron oxides by X-ray analysis. The crystalline form of the precipitated hydrated iron oxides is different according to whether they are precipitated with lime or with ammonia. When heated above 200°C. the precipitated iron oxides lose water and at 350°C. they become anhydrous. Change in crystal structure occurs only on further heating at about 550°C.; the iron oxide thereby loses its reactivity at the same time. Commercial iron oxides have all the same crystal structure as a precipitated iron oxide which has been heated to 550°C.

Investigation of the azo dyes revealed an interesting fact. When the calcium salt of permanent red 4 B is coprecipitated with calcium resinate, a pigment is obtained which has the same color strength as the pure pigment, even though it may contain 30 percent of calcium resinate. This phenomenon is probably due to the fact that calcium resinate precipitates as a translucent gel and dries as such. The gel strongly adsorbs the pigment when coprecipitated therewith and the dispersed pigment is really an adsorption complex.

I have given this rather complete description of the British Exhibit, because very few, if any of you were able to see it. The occasion of my visit there was a so-called "open day." On the other hand your own exhibit for paint and varnish research is open to visitors every day, demonstrating the application of common sense to an industry. A few objects of interest may be inspected in your scientific section booth in connection with this meeting.

From my descriptions some idea may be had as to the fruitful efforts devoted by the paint institutes to sound and rational development. In addition, however, the work of the institutes has in general the great value of providing for the industry itself an unprejudiced judgment on all the new ideas constantly bobbing up in great numbers. Our forward-looking industry has a tendency to adopt every new material or process with great enthusiasm, only very often to be disappointed later. Therefore, it is better to be disillusioned and warned in time. Many examples could be cited, but I need not name these failures as they have been step-children to many of us.

Effects on Factory Practice

The consequence of comprehensive scientific and technical research has been further advancement in factory processes themselves. And it is a fact that common sense is gaining more and more ground in manufacturing, through rational operating procedures and correctly designed machines and equipment.

The old method of copal melting is being gradually displaced by efficient large scale melting, the ratio of heating surface area to amount of copal being chosen so that there is no roasting, but only true melting. The advantages are paler color of the melt, and smaller losses. Instead of the old method of making stand oils by boiling in open kettles, linseeed oil is now thickened in closed aluminum kettles in a current of carbon dioxide, with the advantage of getting nearly neutral and water white oils. Similar advancement has been made in the thickening of tung oil. The old hot process of making resinates is replaced more and more by solution methods which are better and cheaper.

Even the grinding of pigments in the various paint mills has been subjected to scientific study, by measuring the power consumption and time required for the production of a given quantity of paste of like particle size and uniformity, under various mill and paste conditions. Progress may also be noted in filtration and screening. The centrifuge has been introduced instead of the filter press, while for many purposes the new vibrating screens have been found very suitable. Liquid screen systems, the so-called "elutriators," have been proposed instead of the old air screening devices. Elutriators operate on the principle of using a constant liquid velocity which carries with it particles smaller than a certain size. If a suitable dispersion medium, for example, varnish naphtha with a small addition of blown oil, is used, elutriators can be very effective.

Among the expedients for improving and facilitating manufacturing belong all those special agents, developed in recent years, for improving the properties of clear varnishes, enamels and paints, in short all the gloss and flow agents, the dispersing anti-skinning and flatting agents, the special driers and emulsifiers. With these belong, furthermore, the recent methods of accelerating painting processes, i. e., the rapid methods with nitrocellulose and synthetic finishes and the various wet-on-wet processes.

After all the victory of common sense in scientific and technical work is shown outstandingly in the improved quality of goods in our field. To give evidence of this, we need only take ten-year-old samples from some old sample room and compare them with the present quality of the same goods, and we see for ourselves the enormous progress achieved. So it may give us a great thrill to imagine how the same goods will look after another ten years. But of one thing we may even now be sure: "Not worse, but still better."

I trust that my talk has shown what sound common sense has done in our industry. While it does not as yet prevail completely in the commercial end, we have much to hope for through the wonderful cooperation of industry in the working out of President Roosevelt's "New Deal," which seems to be not only the hope of America but also of the whole world.

Detroit Club Paper

R. J. Pohl once more presented the paper prepared by the Detroit Paint and Varnish Production Club.

Effect of High Temperatures on Some Paint Materials

There is a definite demand for a cheap coating which will protect and beautify metal surfaces exposed to the disintegrating stresses of high temperatures.

Porcelain and vitreous enamels have met this need, but at a considerable cost to the consumer. Our paint industry has

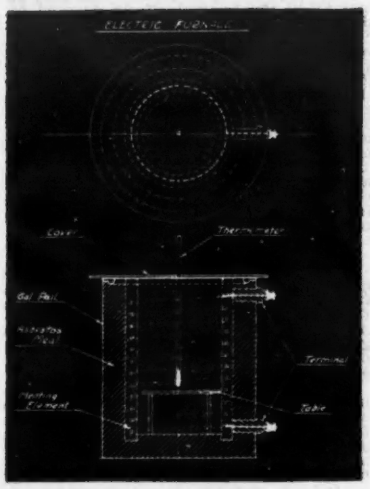
tried and has almost completely failed. Nevertheless, the market for such a material remains and the door of opportunity to an attractive new field lies wide open to us.

This being so, a study of the mechanism of heat resistance would seem to be in order. It is well known, in a general way, that some pigments and vehicles are more heat resistant than others. An exact knowledge of the comparative efficiency in this respect of a representative series of pigments and vehicles is lacking, however, in the standard paint literature. A compilation of the comparative heat resistivities of common paint materials would be an aid in eliminating all but the most meritorious of these materials, thus making possible an extensive study of a few. This, then, is the object of this paper.

The logical method of testing the heat resistance of paint materials is by placing these materials on a metal panel, and noting the temperature of decomposition at the surface of the panel. This method introduces difficulties in measuring the temperature of the surface. It was, therefore, decided to place the panels in a furnace and thus subject them to an easily measured temperature.

Construction of Furnace

A furnace was built in the following manner: A heavy piece of asbestos paper was rolled and pasted into a cylinder 3½ inches in diameter and 9 inches long. Sodium silicate was used as the adhesive.



A Type FD-104 Hoskins 110-volt heating element was coiled on this cylinder and fastened temporarily by sticking the ends of the element through the sides of the cylinder. The coils were separated from each other by asbestos paper wedges. Another piece of asbestos paper was then rolled over the coils and pasted as before. A thin sheet of steel was then wrapped around this and was securely fastened by means of wires. The ends of the cylinder were then cut off so that the total length of the completed cylinder was 7 inches.

The cylinder was then placed vertically in a round one-gallon paint pail and the leads were brought out through cylindrical porcelain insulators inserted in the side of the pail. The space between the cylinder and the pail was then filled with asbestos fiber. A crude rheostat was made by winding about 40 feet of No. 20 chromel resistance wire on a piece of asbestos board. The resistance was varied by tapping the resistance wire coils with a battery clamp attached to one terminal of the furnace. Connections were then made to an ordinary 110-volt lighting circuit. The top of the furnace was covered with a sheet of transparent mica. A hole was punched in the center of this sheet to permit the insertion of a high temperature thermometer. A piece of sheet metal was so bent that when it was inserted in the furnace a table was formed upon which the panels could be placed. The table was about 3 inches below the top of the furnace.

In testing the heat resistance of a pigment, it was spread in a thin film on a steel panel and placed in a horizontal position on the table in the furnace. Any change in appearance of the pigment could then be noted by looking at it through the sheet of mica. The temperature of the furnace was gradually raised until 1000° F. were obtained, at which point the limit of the thermometer was reached and the experiment discontinued. The furnace attained this temperature in twenty minutes when no resistance was used.

The vehicles were sprayed on steel panels and allowed to thoroughly dry either at room temperature or by baking, as was necessary in the case of some synthetics. They were then heated in the furnace until the film was completely decomposed.

Tabulation of Results

(Pigments)

Lampblack: No change at 1000°.
Carbon black: No change at 1000°.
Keystone pigment: No change at 1000°.
Graphite: No change at 1000°.
Blanc fixe: No change at 1000°.
China clay: No change at 1000°.
Whiting: No change at 1000°.
Silica: No change at 1000°.

The above group of pigments is entirely unaffected by 1000° temperature. It is possible that some of the lampblack and carbon black was oxidized, but this was not evident under the conditions of the experiment. This oxidation would show up very easily in a thin paint film.

Sublimed white lead: A slight yellowing at 1000°. Color comes back to normal on cooling.

Lithopone: Slight yellowing at 750°. Very slight permanent yellowing at 1000°.

Zinc oxide (red seal): Slight yellowing at 500°. Slight yellowing at 1000°. Color comes back on cooling.

Titanium oxide: Slight yellowing at 500°. Considerable yellowing at 1000°. Color comes back on cooling.

Chromium oxide: Slight darkening at 1000°.

Burnt umber: Slight darkening at 1000°.

The above group of pigments is slightly affected by 1000°, but still rates very highly in heat resistance.

Ferric oxide, red: Slight darkening at 150°. Purplish shade at 600°. Deep purple shade at 1000°. Came back to a brownish red.

Ultramarine blue: Slight darkening at 500°. Medium darkening at 1000°.

Chrome yellow, light: Color darkened at 150°. Very dark at 1000°. Color comes back somewhat.

Chrome yellow, medium: Color darkened at 150°. Very dark at 1000°. Color comes back somewhat.

Chrome yellow, orange: Color darkened at 150°. Very dark at 1000°. Color comes back somewhat.

The above group of pigments resists heat very well but changes color rather badly, and, therefore, would not be usable when a color change is not allowed.

Chrome green, medium: Started to turn yellow at 180°. Fumes given off at 500°. Changed to brown. Brown shade at 1000°.

Ferric oxide, yellow: Color darkened at 150°. Irreversible red at 500°. Red oxide color at 1000°.

Prussian blue: Started to turn brown at 180°. Fumes given off at 500°. Deep brown shade at 1000°.

Lithol toner: Darkened at 200°. Violet fumes at 500°. Carbonized at 600°.

Toluidin toner: Darkened at 200°. Red fumes at 350°. Carbonnized at 550°.

The above group of pigments is entirely unsuitable for high temperature work.

(Vehicles)

Boiled linseed oil: Started to discolor at 250°. Became nearly black at 500°. Smoked strongly from 350°-400°. Blistered at 600°. Film gone at 720°.

Bakelite type varnish long oil: Started to discolor at 300°. Film began to leave at 750°. Film gone at 850°. Film apparently evaporated.

Amberol K-12 varnish long oil: Started to discolor at 300°. Film started to leave at 750°. Film gone at 820°.

Amberol K-12 varnish short oil: Same characteristics as long oil K-12 varnish.

Amberol 22€ varnish very long oil: Began to discolor at 270°. Film started to leave at 800°. Film gone at 850°.

Tung oil-ester gum varnish, short oil: Began to discolor at 300°. Film started to leave at 800°. Film gone at 820°.

Glycerin-phthalic anhydride synthetic oxidizing-air hardening type: Began to discolor at 350°. Black at 500°. Dulled at 450°. Film started to go at 750°. Film gone at 800°. By evaporation.

Glycerin-phthalic, anhydride synthetic oxidizing-air hardening type: Began to discolor and smoke at 375°. Black at 500°. Film started to go at 750°. Film gone at 800°. By evaporation.

Glycerin-phthalic anhydride synthetic oxidizing-heat hardening type: (This material is a very good heat resistant aluminum liquid.) Exactly the same characteristic as previous material.

Cumar gum W 1: Film started to leave at 830°. Film gone at 900°.

Ester gum: Film started to discolor at 300°. Blistered at 600°. Film gone at 720°.

This paper is in a sense a preliminary one, serving to test the practicality of the furnace and of the method. The technique of heating the surface as quickly as possible to 1000° F. serves only to eliminate any materials which are manifestly unsuitable for the purpose. This technique will necessarily be changed in further work when combinations of pigment and vehicle will be studied more intensively.

Conclusion

New modes of attack suggested by this preliminary work are as follows:—A study of the effect of (a) Pigment concentration and kind of pigment in a film; (b) Type of drier and drier concentration; (c) The type of surface over which the paint is applied; (d) Maximum temperature which a film can resist over a long period of time.

Acknowledgements are due to Professor Publow of Michigan State College for help in the design of the furnace, and to the Oxidermo Products, Inc., Springport, Mich., for financial assistance.

Montreal Club's Paper

The contribution of the Montreal club to this year's program was a second paper on the subject of pointing plastered surfaces. The paper follows:—

Causes of and Remedies for Paint Failure on Plaster Surfaces—II

Through an extensive survey of primer treatment during the past year, the Montreal Paint and Varnish Production Club presents to the federation comparative results of pigments and vehicles when used over alkaline plaster where wet conditions exist, and has obtained the percentage of alkali which can be allowed before breakdown of paint film occurs.

As determined from the work for the first paper dealing with this problem, the free alkalinity present in plaster is the source of failure generally attributed to free lime. Lewellyn (Building Research Bulletin No. 11 of England) explains "that oil paints and oil containing distempers are liable to fail by saponification whenever they are applied over a damp surface containing both free lime and salts of soda and potash. These alkali salts occur in many building materials. Thus they may find their way into lime-containing plasters even though they may be absent from the original plaster itself. It is often found that lime plaster applied over a brickwork backing attacks paint. Alkalies may be present either as impurities in the materials used or as essential constituents, e. g., the potash alum added to many hard-burnt plasters as an accelerator." Similarly, "commercial portland cement usually contains alkali compounds, and in setting it liberates lime."

With this fundamental established further study was made to find the maximum alkali content permissible before failure is encountered in good painting practice under wet conditions.

After securing this figure several series of duplicate panels were prepared with a definite percentage of alkali present, slightly higher than the permissible maximum and later in order to evaluate various pigments, vehicles and combination pigment-primers, by direct standard comparison.

The general procedures followed in the work this year were similar to the methods outlined in the 1932 paper presented at the Washington convention. Panels were allowed forty-eight hours drying before priming and forty-eight hours before first coat of flat paint. Succeeding operations were scheduled on a twenty-four-hour basis.

The five series of panels studied are classified as follows:

Series 1—Permissible alkali.
Series 2—Oil evaluation.
Series 3—Oil evaluation (continued).
Series 4—Pigment evaluation.
Series 5—Combination pigment primers.

Preparation of Panels

All panels were prepared in duplicate with the following ingredients:

Regular Plaster Mix

Calcium-magnesium hydrate of lime...2 parts
Plaster of paris.....1 part
Rockwall plaster.....1 part
Crystalline sodium sulphate.....$Na_2SO_4.10H_2O$

In the case of series 1, the percentage of sodium sulphate was varied in increasing amounts as described later, but in the remaining series the amount was fixed at 1 percent of the total dry weight of the plaster mix and was introduced by first dissolving in the full amount of water used in making the panels to insure uniformity throughout.

Permissible Alkali—Series 1

An analysis of available alkali was determined by chemical examination of the separate constituents used in the manufacture of all panels which gave the following results:

	As NaOH
Calcium-magnesium hydrate.....	—0.10%
Plaster of paris.....	—0.08%
Rockwall plaster.....	—0.11%

These figures average 0.10 percent NaOH when used in the amount specified for the making of the test panels, and represents the normal content of the matrix.

In determining the percentage of available alkali permissible, regular panels were prepared with additions of sodium sulphate as shown:—

	Percent	
	Na_2SO_4-$10H_2O$	Calculated as NaOH
Panels A.....	None.	None.
Panels B.....	0.10	0.03
Panels C.....	0.25	0.06
Panels D.....	0.50	0.12
Panels E.....	0.75	0.19
Panels F.....	1.00	0.25
Panels G.....	1.50	0.37
Panels H.....	2.00	0.50

Referring to the results in table 1, the maximum alkali content which can safely be allowed in plaster before failure occurs in a three-coat system of painting lies between the amounts contained in panels D and E. The average percentage of panels D and E is 0.15 percent NaOH, the maximum addition permissible, plus 0.10 percent, normally contained, gives a total alkali content of 0.25 percent as NaOH limit over which paint may be successfully applied where moisture is a factor.

From this, it seems reasonable to encourage the adoption of a specification by architects and contractors limiting the total available alkali present in any plaster surface to 0.25 percent as NaOH based on an analysis of dry components where paint is to be subsequently applied. Such a specification would insure the paint manufacturer and painter against serious trouble in the future and minimize the course of adjustments which has been greatly overdone in the past in a feeble attempt to retain indignant customers and maintain good-will. We, as paint manufacturers, are out of line with the march of progress in our industry if we allow this menace to continue.

In view of the above results, subsequent work on the evaluation of coatings was conducted with panels containing 1 percent of crystalline sodium sulphate in order that definite break-down could be established and the efficiency of finished panels easily rated. Furthermore, it was our opinion that if a painting system could be designed which would function properly over an added alkali content approximately double the predetermined safe amount, then a successful solution to the problem of painting plaster would be attained.

Treatment of Panels

Oils—Series 2

Panels I—Standard Heat-Treated Linseed Oil

This oil was used as standard throughout the tests since it was one of the most efficient treatments reported in the first paper and relatively simple to prepare.

Method:—Cook varnish linseed oil at 560°F for three hours and drier with 0.5 percent lead and 0.05 percent manganese in the form of naphthenates. Reduce to contain 25 percent mineral spirits.

J—Blown and Heat-Treated Linseed Oil

Method:—Heat varnish linseed oil to 560°F and immediately blow with a fine stream of air long enough to gain a body equal to the standard heat-treated oil; drier with 0.5 percent lead and 0.05 percent manganese as naphthenates and reduce to contain 25 percent mineral spirits.

K—Blown and Heat-Treated Tung Oil

Method:—Heat and blow tung oil for four hours at 250°F; drier with 0.25 percent lead and 0.025 percent manganese as naphthenates. Reduce to contain 25 percent mineral spirts.

L—Sulphurized Linseed Oil

Method:—Cood varnish linseed oil at 560°F for three hours and cool to 300°F. Add 0.5 percent flowers of sulphur and hold at 300°F for fifteen minutes. Drier with 0.5 percent lead and 0.05 percent manganese as naphthenates and reduce to contain 25 percent mineral spirts.

M—Sulphurized Tung Oil

Method:—Cook tung oil at 400°F for one hour and cool to 300°F. Add 5 percent flowers of sulphur and hold at 300°F for fifteen minutes. Drier with 0.25 percent lead and 0.025 percent manganese as naphthenates and reduce to contain 25 percent mineral spirts.

Oils—Series 3

Panels N—Standard Heat-Treated Linseed Oil

O—Sulphur Chloride Treated Linseed Oil

41⅔ Imp. gals. varnish linseed oil cooked four hours at 580-600° F
8⅓ Imp. gals. benzin
14 lbs. sulphur chloride

Method:—Heat oil to 150°F. Add benzin then slowly add the sulphur chloride ina fine stream, stirring well meanwhile, and stir intermittently for one hour afterwards. Then heat to 200°F for four hours and blow air through the mixture until most of the benzin is removed.

P—Heat-Treated Linseed and Tung Oils—(70-30)

Formula:—
36 lbs. tung oil
36 lbs. varnish linseed oil cooked four hours at 580°F
48 lbs. varnish linseed oil
4 lbs. 8⅓ oz. lead-manganese soligen drier
40 lbs. mineral spirits

Method:—Heat tung oil and bodied linseed oil at 580°F for a string. Reduce with varnish oil and heat to 400°F. Add drier and thin.

Q—Cold-Blend Bodied Linseed and Bodied Tung Oils—(70-30)

Method:—Blend 70 parts of the standard heat-treated linseed oil with 30 parts of a tung oil vehicle made as follows:—Cook tung oil for one hour at 400°F, drier with 0.25 percent lead and 0.025 percent manganese as aphthenates. Reduce to contain 25 percent mineral spirits.

S—Heat-Treated Linseed Oil

Formula:—
120 lbs. varnish linseed oil
4 lbs. 8⅓ oz. lead-manganese soligen drier
120 lbs. mineral spirits

Method:—Cook oil at 580°F for four hours—cool to 450°—add drier and thin.

T—Bodied Linseed and Pilchard Oils (70-30)

Method:—Heat-treat and blow with a fine stream of air 70 parts varnish linseed oil and 30 parts pilchard oil for two hours at 560°F—drier with 0.5 percent lead and 0.045 percent manganese as naphthenates—reduce to contain 25 percent mineral spirits.

U—Bodied Linseed and Soybean Oils (70-30)

Method:—Same as for "T."

Pigments—Series 4

Panels 100—Standard heat-treated linseed oil (no pigment)
101—Basic lead carbonate
102—(a&b) Titanium dioxide
103—Composite barium base titanium pigment
104—Composite calcium base titanium pigment
105—Zinc sulphide
106—Lithopone
107—Antimony oxide
108—Zinc oxide
109—Zinc dust
110—Aluminum powder
111—Magnesium carbonate
112—Gypsum
113—Asbestine
114—China clay
115—Whiting
116—Barytes
117—Silica
118—No primer
119—Magnesium fluosilicate
120—Zinc stearate
121—Aluminum stearate
122—Aluminum hydrate
123—Aluminum sulphate

All of the above pigments were ground in the standard heat-treated linseed oil vehicle.

The percentages used were 25 percent pigment and 75 percent vehicle by weight with the exception of:

Aluminum stearate—20 percent pigment and 80 percent vehicle.

Aluminum powder—2.4 pounds per imperial gallon.

Further work in evaluating single pigments by pigmenting in accordance with bulking values rather than on a percentage basis might prove interesting.

Combination Pigments—Series 5

Panels 102—(X and Y) 25% Titanium dioxide
75 Standard heat-treated linseed oil selected for comparison from results of previous series
124—16⅔% Titanium dioxide
16⅔ Magnesium carbonate
66⅔ Standard vehicle
125—25% Titanium dioxide
25 Gypsum
50 Standard vehicle
126—25% Titanium dioxide
25 Asbestine
50 Standard vehicle
127—20% Titanium dioxide
10 Magnesium carbonate
10 Asbestine
60 Standard vehicle
128—25% Titanium dioxide
12½ Gypsum
12½ Asbestine
50 Standard vehicle
129—25% Titanium dioxide
12½ Magnesium carbonate
12½ Gypsum
50 Standard vehicle
130—50% Titanium dioxide
50 Standard vehicle
131—50% Composite calcium base titanium pigment
50 Standard vehicle
132—15% Titanium dioxide
35 Gypsum
50 Standard vehicle
133—18% Aluminum powder
25 Titanium dioxide
57 Standard vehicle
Aluminum powder stirred in after grinding pigment
134—18% Aluminum powder
25 Asbestine
57 Standard vehicle
Aluminum powder stirred in after grinding pigment

Painting of Panels

Two coats of light blue flat paint as

described below were applied to all panels, allowing twenty-four hours between coats.

Lithopone	53.9%
Zinc oxide	1.7%
Asbestine	6.9%
*Long oil varnish	28.4%
Mineral spirits	9.1%

Tinted to the standard light shade of blue with prussian blue in oil.

*Long oil varnish: Tung oil 14.3 percent, linseed oil 21.4 percent, limed rosin 11.9 percent, basic lead carbonate 2.4 percent, mineral spirits 50 percent.

Method: Cook linseed oil at 560°F for three hours. Heat tung oil and rosin to 565°F. Add the hot linseed oil and gain 565°F. Cool to 550°F and hold for one and one-half hours, cool to 525°F and add basic lead carbonate; hold ten to fifteen minutes, cool to 480°F and thin.

Inspection of Panels

Twenty-four hours after the final coat of blue paint was applied, the panels were immersed in a water bath keeping the water level approximately half the thickness of the panels throughout the tests.

Regular inspection by a committee was scheduled at intervals of twenty-four hours after immersion, seventy-two hours and then at periods of twice per week. The records of these observations are found in tables 1 to 5.

The key to the abbreviations used in the tables is as follows:

B.1	Slight blistering
B.2	Medium blistering
B.3	Bad blistering
L.1	Slight "lime" burn
L.2	Medium "lime" burn
L.3	Medium "lime" burn
S.	Saponification of vehicle
St.	Staining by execretion of walnut-colored globules

In most of the tests on the pigmented primers in tables 4 and 5, the appearance of a brown stain collecting in droplets on the face of the panels increased as the immersion in water continued. These could be washed off with water without injury to the paint coating and seem to bear no relationship to visual saponification. This phenomenon did not occur on panels treated with clear oil primers.

Conclusions

(A) The total alkali permissible in plaster before breakdown of paint-film occurs under wet conditions is 0.25 percent as NaOH.

Since present day building methods will not permit time enough for walls to dry out before painting, there must be an effort made to regulate the most detrimental factor under these conditions. Therefore, the Montreal club recommends that a specification be introduced by the federation to the trade associations of architects and building contractors limiting the total available alkali of any plaster surface construction over which paint is to be applied to 0.25 percent NaOH, based on the total weight of dry ingredients.

(B) While the efficiency of sulphurized linseed oil (using the sulphur chloride treatment) as a sealer to prevent "spotting" caused from suction is better than straight heat-bodied linseed oil, there is little to choose between them in their ratings for alkali-resistance and the latter has advantages in simplicity, cost and stability.

(C) There seems to be no disadvantage in using linseed oil bodied to take equal parts of thinner when compared with linseed oil taking 25 percent thinner. Further work in this connection would prove valuable.

(D) Blown-cooked oils induce blistering with no improvement in alkali resistance.

(E) Treated tung oil definitely retards the effect of alkali but introduces blistering, an equally serious fault, to a marked degree, probably due to a more impervious film than produced by linseed oil. Various combinations of treated linseed oil and tung oil do not compensate for each other's weaknesses.

(F) Blown-cooked mixtures of linseed oil and soybean or pilchard oils detract from the qualities of similarity treated straight linseed oil.

(G) In the case of single pigments, titanium dioxide, composite calcium base titanium pigment, magnesium carbonate, gypsum and asbestine are most efficient over wet alkaline surfaces.

(H) A pigment mixture of 30 per cent titanium dioxide and 70 per cent gypsum shows at least equal alkali resistance to composite calcium base titanium pigment, the two being comparable in cehmical composition.

(I) In two and three pigment formulas, asbestine and magnesium carbonate apparently contribute to blistering while gypsum or calcium sulphate as present in composite calcium base titanium pigment does not show this tendency. The use of calcium sulphate in the form of plaster of paris as a chemical wash was reported, in our work of 1932, as a highly satisfactory pretreatment for plaster, which has also been confirmed by the Building Research Board of England.

(J) Aluminum powder used in combination with titanium dioxide or asbetstine gives poorer results than when any of the three are used alone. Perhaps the breaking up of the leafing properties of the aluminum is partly responsible for these results.

(K) In combination pigment formulas, it appears essential to have a high percentage of some form of calcium sulphate present—a sufficient amount of titanium dioxide to give hiding—and, only enough suspending pigment such as asbestine to insure a practical product free from hard settling.

Such a combination of pigments incorporated in a heat-bodied linseed oil vehicle or possibly a sulphurized linseed oil vehicle of the proper type, will produce a pigmented primer or sealer coat for wet-alkaline conditions which is truly efficient.

We hope that individual workers throughout the industry may derive sufficient knowledge and leads along certain channels brought out in this survey to assist them in developing products which will prove even better than those they are now producing.

The technical committee is indebted to the entire membership of the Montreal club for their support and valuable assistance in making possible such an extensive study for the past two years covering the causes and corrections for paint failures on plaster surfaces.

Table 1

Water Immersion Test for Alkali-Permissible—Series 1

Type % Sodium Sulphate	Panel No.	24 Hours	72 Hours	240 Hours	Remarks
None	A.1	O. K.	O. K.	O. K.	
None	A.2	O. K.	O. K.	O. K.	O. K.
.1	B.1	O. K.	O. K.	O. K.	
.1	B.2	O. K.	O. K.	O. K.	O. K.
.25	C.1	O. K.	O. K.	B.1	
.25	C.2	O. K.	O. K.	O. K.	O. K.
.50	D.1	O. K.	O. K.	O. K.	
.50	D.2	O. K.	O. K.	O. K.	O. K.
.75	E.1	O. K.	B.1 & L.1	B.1 & L.1	
.75	E.2	O. K.	B.1 & L.1	B.1 & L.1	Good
1.00	F.1	L.1	B.2 & L.2	B.2 & L.2	
1.00	F.2	L.1	B.2 & L.2	B.2 & L.2	Poor
1.50	G.1	B.3 & L.3	B.3, L.3 & S.	B.3, L.3 & S.	
1.50	G.2	B.3 & L.3	B.3, L.3 & S.	B.3, L.3 & S.	Very bad
2.00	H.1	L.3	L.3 & S.	B.1, L.3 & S.	
2.00	H.2	B.3 & L.3	B.3, L.3 & S.	B.3, L.3 & S.	Bad

Table 2

Water Immersion Test for Oil Evaluation—Series 2

Type	Panel No.	24 Hrs.	72 Hrs.	144 Hrs.	240 Hrs.	Remarks
Standard L. O.	L.1	L.1	L.2	L.2	L.2	Poor (standard rating)
Standard L. O.	I.2	L.1	L.2	B.1 & L.2	B.1 & L.2	
Blown L. O.	J.1	L.1	L.2	B.1 & L.2	B.1 & L.2	
Blown L. O.	J.2	B.1 & L.1	B.1 & L.2	B.1 & L.2	B.1 & L.2	Very poor
Blown C. W. O.	K.1	B.3	B.3	B.3 & L.1	B.3 & L.1	
Blown C. W. O.	K.2	B.3	B.3	B.3 & L.1	B.3 & L.1	Very bad (for blistering)
Sulphurized L. O.	L.1	L.3	L.3	B.1 & L.3	B.1 & L.3	
Sulphurized L. O.	L.2	L.3	L.3	L.3	L.3	Very bad (for lime burn)
Sulphurized C.W.O.	M.1	B.2	B.3 & L.1	B.3 & L.1	B.3 & L.1	
Sulphurized C.W.O.	M.2	B.2	B.3 & L.1	B.3 & L.1	B.3 & L.1	Bad

Table 3

Water Immersion Test for Oil Evaluation—Series 3

Type	Panel No.	24 Hrs.	72 Hrs.	168 Hrs.	240 Hrs.	Remarks
Standard L. O.	N.1	O. K.	L.1&S.	L.1&S.	L.1&S.	Poor
Standard L. O.	M.2	O. K.	L.1&S.	B.3,L.1&S.	B.3,L.1&S.	(standard rating)
Sulphur Chloride L. O.	O.1	O. K.	L.1&S.	L.1&S.	L.1&S.	
Sulphur Chloride L. O.	O.2	O. K.	O. K.	B.1	B.1	Poor
Bodied L. O. & C. W. O.	P.1	B.3&L.1	B.3&L.1	B.3&L.2	B.3&L.2	
Bodied L. O. & C. W. O.	P.2	B.3,L.1&S.	B.3,L.1&S.	B.3,L.2&S.	B.3,L.2&S.	Bad
Blended L. O. & C. W. O.	Q.1	O. K.	B.3&L.1	B.3&L.1	B.3&L.1	
Blended L. O. & C. W. O.	Q.2	O. K.	L.1	B.1&L.1	B.2&L.1	Very poor
Bodied L. O.	S.1	B.1,L.1&S.	B.1,L.3&S.	B.1,L.3&S.	B.3,L.3&S.	
Bodied L. O.	S.2	O. K.	O. K.	O. K.	Poor	
Bodied L. & O. Pilchard	T.1	B.3,L.3&S.	B.3,L.3&S.	B.3,L.3&S.	B.3,L.3&S.	
Bodied L. O. & Pilchard	T.2	B.3	B.3	B.3&L.1	B.3&L.1	Bad
Bodied L. O. & Soybean	U.1	B.1,L.3&S.	B.3,L.3&S.	B.3,L.3&S.	B.3,L.3&S.	
Bodied L. O. & Soybean	U.2	B.3,L.3&S.	B.2,L.3&S.	B.2,L.3&S.	B.2,L.3&S.	Very bad

Table 4

Water Immersion Test for Pigment Evaluation—Series 4

Type.	Panel.	18 hours.	72 hours.	168 hours.	Remarks.
Standard L.O.	100x	B.1&L.1	B.2&L.2	B.3,L.3&S.	Poor
Standard L.O.	100b	L.1	L.1	L.2&S.	(Stand. rating)
Lead carbonate	101a	L.1	L.2&S.	B.1,L.3&S.	
Lead carbonate	101b	L.1	B.1&L.1	B.1,L.3&S.	
Titanium dioxide	102a	O.K.	B.1	B.1,L.1&St.	
Titanium dioxide	102b	O.K.	L.1	L.1&St.	Good
Barium base tit.	103a	L.1&S.	B.1,L.1&S.	B.1,L.3&S.	
Barium base tit.	103b	B.1,L.1&S.	B.1,L.1&S.	B.1,L.3&S.	
Calcium base tit.	104a	O.K.	O.K.	O.K.-St.	
Calcium base tit.	104b	O.K.	O.K.	O.K.-St.	O.K.
Zinc sulphade	105a	L.2	L.2	B.1,L.3&S.	
Zinc sulphade	105b	L.3	L.3	B.1&L.3	
Lithopone	106a	L.1	L.2&S.	L.3&S.	
Lithopone	106b	L.1&S.	L.3&S.	L.3&S.	
Antimony oxide	107a	L.1&S.	B.1,L.2&S.	B.3,L.3&S.	
Antimony oxide	107b	B.1,L.1&S.	B.1,L.1&S.	B.1,L.2&S.	
Zinc oxide	108a	L.1	B.1,L.1&S.	B.1,L.2&S.	
Zinc oxide	108b	L.1	L.1	B.1,L.2&S.	
Zinc dust	109a	B.1,L.2&S.	B.1,L.3&S.	Discontinued	
Zinc dust	109b	L.2&S.	L.3&S.	Discontinued	
Al powder	110a	L.1	L.3&S.	L.3&S.&St.	
Al powder	110b	L.1	L.1&S.	L.1&S.&St.	
Mg carbonate	111a	O.K.	O.K.	L.1&St.	
Mg carbonate	111b	O.K.	O.K.	O.K.-St.	Excellent
Gypsum	112a	O.K.	O.K.	O.K.-St.	
Gypsum	112b	O.K.	O.K.	O.K.-St.	O.K.
Asbestine	113a	O.K.	O.K.-St.	L.1-St.	
Asbestine	113b	O.K.	O.K.-St.	L.1-St.	Excellent
China clay	114a	B.1&L.1	B.1&L.1	B.1,L.2&S.-St.	
China clay	114b	L.1	L.1	B.1,L.2&S.-St.	
Whiting	115a	L.1	L.1	L.1,L.1&S.-St.	
Whiting	115b	L.1	L.1	L.2&S.-St.	
Barytes	116a	B.1&L.1	B.3&L.3	Discontinued	
Barytes	116b	L.2	L.3	Discontinued	
Silica	117a	B.1,L.3&S.	B.1,L.3&S.	Discontinued	
Silica	117b	L.1	L.1&S.-St.	Discontinued	
No primer	118a	B.3,L.3&S.	B.3,L.3&S.	Discontinued	
No primer	118b	B.3,L.3&S.	B.3,L.3&S.	Discontinued	
Mg-fluosilicate	119a	L.3&S.	L.3&S.	Discontinued	
Mg-fluosiciate	119b	L.3&S.	L.3&S.	Discontinued	
Zinc stearate	120a	Bad sap.	Bad sap	Discontinued	
Zinc stearate	120b	Bad sap.	Bad sap	Discontinued	
Al stearate	121a	Bad sap.	Bad sap	Discontinued	
Al stearate	121b	Bad sap.	Bad sap	Discontinued	
Al hydrate	122a	L.2&S.	B.1,L.3&S.	Discontinued	
Al hydrate	122b	Bad sap	Bad sap	Discontinued	
Al sulphate	123a	O.K.	B.1&L.1	B.1,L.3&S.-St.	
Al sulphate	123b	O.K.	O.K.	B.1,L.3&S.-St.	

Table 5

Water Immersion Test for Combination Pigment Primers—Series 5

Type.	Panel No.	18 hours.	90 hours.
Titanium dioxide, 25%	102x	O.K.	L.1
Titanium dioxide, 25%	102y	L.1&S.	L.1&S.
Titanium dioxide	124a	O.K.	B.1-St.
And Mg. carbonate	124b	O.K.	B.1-St.
Titanium dioxide	125a	O.K.-St.	O.K.-St.
And gypsum	125b	O.K.	O.K.-St.
Titanium dioxide	126a	O.K.	L.1-St.
And asbestine	126b	O.K.	O.K.-St.
TiO_2-Mg. carbonate	127a	B.1,L.1&S.	B.3,L.2&S.-St.
And asbestine	127b	L.1	B.3,L.1&S.
TiO_2-Gypsum	128a	O.K.-St.	B.1-St.
And asbestine	128b	O.K.-St.	B.2-St.
TiO_2Mg. carbonate	129a	O.K.-St.	O.K.-St.
And gypsum	129b	O.K.	B.1-St.
Titanium dioxide, 50%	130a	O.K.-St.	O.K.-St.
Titanium dioxide, 50%	130b	O.K.-St.	L.1-St.
Calcium base titanium	131a	O.K.-St.	B.1&L.1-St.
Calcium base and titanium, 50%	131b	O.K.-St.	O.K.-St.
TiO_2-15%-Gypsum 35%	132a	O.K.-St.	O.K.-St.
TiO_2-15%-Gypsum 35%	132b	O.K.-St.	L.1-St.
TiO_2-Al. powder	133a	B.1,L.3&S.-St.	B.1,L.3&S.-St.
TiO_2-Al. powder	133b	B.1,L.2&S.-St.	B.1,L.2&S.-St.
Asbestine	134a	B.1,L.1&S.-St.	B.1,L.1&S.-St.
And Al. powder	134b	L.1&S.-St.	B.1,L.1&S.-St.

Table 5A

Water Immersion Test for Combination Pigment Primers—Series 5

Type.	Panel No.	168 hours.	274 hours.	
Titanium dioxide, 25%	102x	L.1&S.-St.	L.1&S.-St.	Good
Titanium dioxide, 25%	102y	L.1&S.	L.3&S.-St.	(Standard rating)
Titanium dioxide	124a	B.1-St.	B.3&L.1-St.	
And Mg. carbonate	124b	B.1,L.1&S.-St.	B.3,L.1&S.-St.	Good
Titanium dioxide	125a	B.1,L.1&S.-St.	B.1,L.1&S.-St.	
And gypsum	125b	B.1,&L.1-St.	B.1&L.1-St.	Very good
Titanium dioxide	126a	B.1-L.1-St.	B.1&L.1-St.	Very good
And asbestine	126b	B.1-St.	B.1&L.1&S.-St.	
TiO_2-Mg. Carbonate	127a	B.3,L.2&S.-St.	B.3,L.2&S.-St.	
And asbestine	127b	B.3,L.1&S.-St.	B.3,L.2&S.-St.	
TiO_2-Gypsum	128a	B.1-St.	B.1-St.	Excellent
And asbestine	128b	B.3-St.	B.3&L.1-St.	(For lime burn)
TiO_2Mg. carbonate	129a	B.1,L.1-St.	B.1,L.1&S.-St.	Very good
And gypsum	129b	B.1&L.1-St.	B.1&L.1-St.	
Titanium dioxide, 50%	130a	L.1-St.	L.1-St.	Excellent
Titanium dioxide, 50%	130b	L.1-St.	L.1-St.	(For blistering)
Calcium base titanium	131a	B.1&L.2-St.	B.1&L.2-St.	Very good
Calcium base titanium, 50%	131b	B.1-St.	B.1-St.	
TiO_2-15%-Gypsum 35%	132a	L.1-St.	L.1-St.	Excellent
TiO_2-15%-Gypsum 35%	132b	L.1-St.	L.1-St.	(For blistering)
TiO_2-Al. powder	133a	B.1,L.3&S.-St.	Discontinued	
TiO_2-Al. powder	133b	B.1,L.2&S.-St.	Discontinued	
Asbestine	134a	B.1,L.1&S.-St.	Discontinued	
And Al. powder	134b	B.1,L.1&S.-St.	Discontinued	

New England Club's Paper

The following paper was presented by F. C. Atwood for the New England club:—

Valuation of Paints for Acoustical Treatments

Progress in any field of endeaver always is accompanied by problems. Kettering is reported as stressing the following statement, "The price of progress is trouble". Salesmen, sales managers, treasurers, directors and others of our business associates all hope and pray that we, as production men, will soon invent and produce some fool-proof commodity that never develops troubles of any kind, that costs little or nothing to make, but commands a high selling price, that is so universal in its application that it is everything required in any situation.

Fortunately for us and our jobs no such divine creation has been developed as yet. When we do have such a commodity, then we, in turn, may wonder why invention and production methods aren't just as necessary in eliminating guesswork and hit-and-miss methods in sales efforts; why production cannot be planned so that just the right amount of each commodity will flow smoothly without sales resistance to those who need and can use these goods. We will wonder why our financial associates do not invent better methods for capital distribution so that less capital will flow into channels already full, and so cause disastrous floods of overproduction. Rather, more capital should be ready to create new goods for new comforts.

We apparently progress because of our desires to overcome past difficulties, and in turn our progress is beset with new difficulties and troubles. It is in the realm of philosophy to decide what this final goal of perfection may be. We may proceed in more comfort and with more accomplishment if we adopt a Baconian attitude and progress by overcoming those problems which immediately confront us.

The paint formulator has had more than his share of these immediate problems. In the first place, he is swamped with new raw materials from which he must choose the ingredients for his product. Next, these new ingredients may require changes in his manufacturing methods. Changes in distribution methods and financial problems may also bear down on his choice of materials as well as change his production and inventory plans. But finally and quite outside his control, the architect, the engineer and the building materials manufacturer are all changing the composition and construction of the surfaces which are to be protected and decorated. Either the paint chemist must adapt his product to these new requirements or some other type of decorative material will get the job.

The paint industry has been fortunate that many of our human desires are satisfied through the eye. Since we have become conscious of the mental satisfaction and the sense of comfort and even luxury that is created in us by proper color harmony in our surroundings, our shelters have had increasing amounts of paint used for decoration. Color is much more a determining factor in the use of paint than is its protective value or even useful length of life. More and more paint is required to change color effects rather than because a paint has worn out.

Relief from Noises

Those professional people who are responsible for and concerned with the trend and development of shelter requirements are now ready to promote further human comfort by relieving our ears of noises and discordant and interfering sound. Edison claimed to be quite happy with his deafness because sound energy did not press in on him and disturb his creative thoughts. We cannot help but recognize that we are often as much fatigued by noise as by conscious effort of our own. We seek out a quiet place in which to do constructive thinking and planning and listen to the still small voice of our thoughts.

It is the purpose of the acoustical engineer and the manufacturer of acoustical treatments to make living conditions more pleasant by treating our ears with some of the respect that our eyes have more recently been awarded. To accomplish his complete purpose, the acoustical engineer must not offend the eye. His acoustical treatment must be pleasing in appearance, it must be in keeping with its surroundings, and, in general, it must be decorative or decorated.

The paint manufacturer and the manufacturer of acoustical treatments must, therefore, understand each others' problems. It is the purpose of this paper to outline for the paint manufacturer some of the fundamentals of design of acoustical correctives. In addition, a certain amount of experimental evidence is available showing the effect of paint on acoustical surfaces. The writer has also outlined some experiments to show the possible effects of paint on these surfaces. The New York Paint and Varnish Production Club suggested this paper and because of the writer's connection with the manufacture of both paint and acoustical products, he offered to correlate this subject as best he could.

The acoustical correctives and treatments considered in this discussion are

used for the absorption of sound. It is well to bear in mind that we are, for the moment, not concerned with the transmission of sound through partitions, nor are we concerned with echoes. The surfaces of sound-absorbing treatments are those which the paint formulator will meet with increasing frequency in the future and are those which his product may aid or mar. In fact, paint may destroy completely the efficiency of many good accoustical treatment. It is hoped that this paper may show how this latter condition may be avoided and show as well how a paint film in and of itself is fundamentally of small value as an acoustical corrective.

We find sound sometimes defined as the sensation registered by certain vibrations impigning on the ear. This definition, which denotes the sensation rather than the stimulus, we need not here consider. Rather are we interested in the stimulus itself, its behavior, characteristics, and possible transformations before it has an opportunity to please or displease us by creating the sensation.

We may then define sound as the stimulus, a form of energy existent as wave motion. Being a form of energy, we, of course, know that it must originate from some other form of energy and that it eventually must be transformed again to the original or still a third form. This is another way of stating the first law of thermodynamics or the law of the conservation of energy. Its origination is a mechanical vibration of some sort. This vibration causes an alternating compression and rarefaction of the medium in which it occurs, the compressions and rarefactions transmitting themselves through the medium with a certain definite velocity. Since we are not now concerned with sound transmission through solids, or in fact through any medium except air, we will confine ourselves to the action of sound in air.

Perhaps at this point it would be as well to use the popular analogy with waves on water to aid in getting a conception of sound waves. If a smooth, quiet body of water has its surface disturbed as, for example, by the dropping of a stone on it, we will note a series of waves traveling out in circles from the center of disturbance. If we are sufficiently careful in performing and repeating our experiment, using various sizes of stones and throwing them with different velocities, we will notice the following facts:—

Characteristics of Sound Waves

1. As a wave gets farther from its source it loses in height.

2. There is a definite distance between the tops of successive waves.

3. The wave consists of a temporary up-and-down motion of the particles of water, no actual change in position or condition of these particles remaining after the wave motion ceases.

4. We find that the greater the amount of energy used in disturbing the water then the higher are the waves.

We can then measure the distance between the tops of successive waves; we can also determine how many waves travel by a given point in a second or a minute. By multiplying this so-called wave length by the number per second (frequency) passing a given point, we have the velocity with which each individual wave front is progressing.

Due to inelastic properties of water, plus gravity we find that the height of a wave and the wave length are not entirely independent of each other, but we can easily picture this independence with a perfectly elastic medium. Air in its function as a medium for sound transmission is effectively elastic, and as a result the amplitude of sound waves is independent of wave length and also the velocities of all wave lengths of sound are, unlike water waves, identical. In other words, the amplitude of sound waves, which determines the loudness, does not affect the wave length, nor does it affect the velocity, which is constant for all wave lengths.

In our water analogy the particles of water are displaced up and down, which is perpendicular to the direction in which the wave is traveling. With sound the particles are displaced to and fro along the line in which the wave is traveling. Water waves are then transverse waves, while sound waves are longitudinal waves. Again, whereas the water waves travel in a circle in two dimensions, sound waves, on the other hand, travel from the source in all directions, the wave front in free space being a sphere.

The principal properties by which we describe sound are loudness, or intensity, and pitch. As mentioned above, loudness is a measure of the amount of energy contained in the sound wave, and is determined by the pressure differences of compression and rarefaction of the particles, equivalent in our water analogy to the maximum displacement of water particles, or height (amplitude) of the wave. It follows then that in a perfectly elastic medium such as we may consider air, the amplitude of sound waves varies inversely as the square of the distance from the source. Pitch is determined by the wave length or, since the product of wave length and frequency is the velocity of sound itself—a constant—then pitch is measured by the frequency. The shorter the wave length is then the greater the frequency and the higher the pitch. Sounds with a frequency of less than 20 or more than 20,000 vibrations per second are inaudible. We rarely have to consider in our work frequencies lower than 40 or higher than 4,000. It is interesting to note that the wave lengths involved in this range are from approximately 25 feet (40 cycles) to about three inches (4,000 cycles). These heights are derived from the velocity of sound which has been determined under normal conditions for air at approximately 1,120 feet per second and the frequencies as noted.

In order best to study acoustic properties and have a basis of comparison with the work of others, certain definite frequencies within the working range are used as standards. Since so much acoustical work has been done in conjunction with auditoriums and other structures where music is involved it is natural that the selection of these frequencies be according to the music scale. Standardization has been made on the musical note C, which in successive octaves has 128, 256, 512, 1,024, 1,048 and 4,096 cycles per second. The octave above middle C has 512 cycles per second and this has been selected as the frequency representing the most typical or most prevalent sound.

Results of Interference

If we have waves traveling along water and insert a solid barrier in their path we find that the waves strike this barrier and reflect from it, traveling back over the water in their reflected direction. The continuance of this action in a partially enclosed basin soon causes a serious chaotic, choppy surface. This condition has existed in the Charles River basin in Boston, and was so serious as to almost prevent rowing regattas. The condition is being corrected by sloping the sides of the basin so that the waves dissipate themselves on a gentle slope and so prevent their reflection. The force of the waves is gradually lost or absorbed in ways which are harmless.

This problem of preventing the choppy, chactic interference of sound waves is the principal phenomenon the acoustical engineer has to study. He must, within the confines of a very small volume beneath the wall surface of a room, take a sound wave, entice it through the open doors in the surface, and prevent it from returning through these doors as sound. We can see that the reflection of our water waves may be varied from a nearly 100 percent reflection or zero absorption with a vertical wall to zero reflection or 100 percent absorption with a very shallow sloping bank. Sound absorption materials will vary in their efficiency in the same degree. It is necessary, then, to have a surface with sufficient holes or pores to permit as much of the sound waves as possible to enter and then by repeated reflections or by the frictional resistance of the continuous capillary passages under that surface to dissipate the energy of the sound into heat. The regular oscillatory motion which is the basis of sound waves so becomes changed into the random motion of molecules which is kinetic energy or heat.

As with other and similar physical phenomena there is no perfect absorber nor perfect reflector of sound waves. Very elastic surfaces, such as truly rigid non-porous stone, plaster, or metal walls reflect a large proportion of the sound incident to them, but with these there is, nevertheless, some loss by absorption. If this were not so we could construct a room so that a sound once started would reflect back and forth and around without loss and would, consequently, go on forever. Rooms have been constructed for purposes of sound experimentation and called sound chambers which will maintain a sound above audibility for a considerable time. When we realize the number of reflections involved in ten seconds within a room, say 20x20x20 feet, taking the velocity of sound as 1,120 feet per second, it is apparent that very little absorption can exist at each reflection if at the end of that time the sound is still audible.

This persistence of sound which maintains in an enclosure is termed reverberation. It is expressed as reverberation time under any given conditions of surface, etc., and represents the number of seconds after a sound source of a definite intensity is cut off before the sound intensity decreases or decays to a specified level. The objection to long reverberation time arises from the fact that reflected waves cross and recross, overlapping each other as well as the direct waves, thus making it difficult for our ears to sift out the sound we wish to hear from those we have already heard. Increasing the intensity of the source merely raises the level of both direct and reflected waves and so adds to, rather than diminishes, the confusion. Where such a condition exists it is necessary to add sound absorbing material or substitute it for the low absorbing surfaces until each reflection is sufficiently reduced in intensity to eliminate this confusion. People in a room serve as an absorber of sound; carpets, drapes and furniture also serve, but these factors in most cases are not sufficient, so special absorbent materials are placed on the walls and ceilings.

Basis of Measurement

In order to obtain quantitative measures and values in this work we must, as with other forms of energy, have units with which to work. In determining these for study with sound it was reasoned that since sensation is a logarithmic function of stimulus and the sensation of the ear was to be used in determining sound levels, the logarithmic scale would be the logical scale for expressing the energy intensity or level. Furthermore, most problems involve the result of repeated reflections, each one of which yields a proportion of the incident wave. This again leads us to a logarithmic function. Since a zero point is necessary a convenient low intensity level may be taken; this is becoming established at one micro watt per square centimeter. The unit for comparing intensity levels is the bel, named in honor of one of our first students of sound, but we have found, through experience, that a unit one-tenth the size is more convenient; this is called a decibel and is ordinarily referred to as db. To give some idea of the range involved—at 512 vibrations or cycles per second the difference in intensity levels between a barely audible sound and one which is painfully loud is 130 db.

As paint formulators, we are familiar with reflection. We try to make our paints as highly reflective of light as is possible for any given color. We often diffuse it by making the surface of our paint rough or porous. We can do this because the wave length of light is so short in relation to the roughness of our surface. We also find that different colors absorb different parts of white light. For white light reflection, we want uniform reflection of all wave lengths. Similar problems are encountered when sound is absorbed. With light, however, the wave lengths involved are smaller than or of the same order as the irregularities and pores of the surface, whereas with sound in the audible range the wave lengths are great in comparison with the irregularities which are feasible to use.

The acoustal engineer has to choose between several methods of transforming these long wave lengths of sound energy into a form of energy which has no effect on the ear. Experience has shown that only materials which are porous or inelastically flexible or compressible absorb any appreciable amount of sound. Even the absorption by inelastic materials is small as compared with the needs for most requirements. The most efficient correctives are, therefore, dependent on the porosity of the absorbents. In order to utilize this porosity it is necessary that the sound be allowed to pass in and out of the surface of the material. The porosity must be continuous with intercommunicating pores throughout the body of the material and directly connecting with and penetrating the surface.

Paint as normally used tends to bridge over and seal porosity in surfaces. Its functions as a protective material is to prevent the entrance of moisture and dust either into the paint film or into the surface to which it is applied. So long as paint is applied to surfaces in a tight film, it not only destroys any absorptive value of the under surface but can be effective by itself only by an amount determined by its inelastic compressibility. This fact has been recognized for a number of years. Most sound chambers for the measurement of absorption coefficients have their walls painted to give the maximum reverberant effect.

The earliest results published on the effect of paint on acoustical coefficients is by W. C. Sabine. His results are listed in table I under Brick Walls. The absorptive of brick work was materially reduced by paint. Sabine measured the coefficient for plaster on tile at the Boston Public Library and gave the figure for 512 as 0.025. This was lime plaster with water paint. Bagenal and Wood in a recent book state: "Plasters used for absorbing must be left undistempered." They also state "a wallpaper varnished or distempered has even less absorbing power, even for high frequencies." Referring to coke breeze concrete, they state "The material could properly be refined and sprayed with a stain or dye to improve the appearance."

F. R. Watson states of Acousti celotex that "if painted or distempered on the side of the perforations, the absorbing power is not reduced." This is a type of material which offers entrance to the sound through large holes or perforations so that the remainder of the surface may be covered without serious effect.

Bagenal and Wood again state "Paint or distemper blocks up the surface pores of tile and reduces efficiency." Again they state "Canvas membranes should not be oil painted but distempered and brushed to open the pores of the material." These authors have been quoted because they appear to be the only ones who refer at any length to the painting of absorbents.

Painting Is Practicable

It is a fact, however, that acoustical correctives may be painted unless they are of the type whose surface is so covered with fine pores that even a very carefully sprayed thin coat may clog the pores. The surfaces which we may have to paint will be determined in considerable measure by the types of materials which are liable to be successful as architectural as well as acoustical aids. It is probable that for new work, at least, the architect will specify acoustical plaster in increasing quantities. This is for reason of cost partly but principally because he prefers a material which is an integral part of his design. Tile type correctives are easier to use where the application is over existing construction.

Such treatments will require paint either when installed or for redecoration. At present water paints are used to a considerable extent. They are naturally porous unless compounded othewise. So-called non-bridging lacquers are also used. Such lacquers are thinned back so that as they dry the film is too thin to bridge. Such oil paints as are used have a high percentage of volatile thinner and a minimum of vehicle to hold the pigment. The vehicle should also flow freely around the surface particles or granules of the acoustic material and avoid bridging by this means. High coverage pigments are best since less material is needed to give a definite color effect. Finally, thinning down with volatile thinner and a careful application of spray coats will obviate most of the damage to the acoustic material.

We might consider for a moment the possibility of acoustical paints as a treatment by themselves. It may be said that any small amount of absorption may help in cases that are not seriously in need of correction. Hence, if paint could be so designed and applied as to have but a 8 to 10 percent absorption it might be of benefit since it covers large areas of surface. Modern requirements are such, however, that a paint probably should have at least 20 percent absorption to be of value as a corrective. Such an amount of absorption would presuppose a very thick layer of rather porous paint. This indicates a texture paint of high specific volume. In the early days of sound pictures, there was evidence that theatres decorated with heavy texture effects were better acoustically than those without such effects. The writer had a number of measurements made in theatres and arrived at a figure of 8 to 10 percent absorptive for a heavy texture unglazed. One room built as a sound chamber for a test of this paint did run to 12 percent. Even such values are non-competitive with materials now available and especially designed as absorbing materials.

Paint, even if it has a porous surface, can have but little effect in transforming sound energy unless at the same time it has length to these pores. The paint chemist must recognize that he is dealing with wave lengths vastly different in magnitude from those encountered in light-reflection phenomena. This accounts for the very small effect of even a very rough surface in diffusing sound. The roughness has to be at least a few inches high and, for the average sound, a few feet high before it is capable of breaking up and scattering sound. This is the purpose of deep box-like decoration in public halls and theatres. This breaks up the wave patterns, but does not absorb the sound.

Referring again to the literature, we find some information published in the direction sheets of manufacturers of acoustical materials.

A manufacturer of acoustical felt says "a very important consideration is the painting or decorating of acoustical materials. If such painting closes the pores of the material or if painting a membrane stiffens it, the absorbing efficiency is reduced. The effect of spraying paint is not as serious as that of applying with a brush. A firm know as ——— manufactures a material known as ——— which can be applied to acoustical westfelt, adding to the decorative qualities without depreciating the sound absorbing value."

Another manufacturer in a Technical Acoustical Bulletin says "——— paint gives a good finish and excellent light reflection properties to acousti-celotex cane fibre and mineral fibre tiles. This material is really a water paint, but it has working qualities different from most water paints with which you are probably familiar. It is not necessary to size either the cane fibre or mineral fibre tiles before ——— is applied." Light reflection factors measured by the Curtis Lighting Institute are then given.

Special Paint Needed

Still another manufacturer writes, "We endeavor to insure so far as possible that our corkoustic and ceramacoustic will be painted with a paint material possessing a high degree of opacity, in order that the quantity of paint used may not prove excessive. There is one other point which we question whether you will wish to mention and that concerns the mode of applying the material. We refer to the fact that it is our practice to specify wherever possible that painting be carried out by the spraying method rather than by brushing. Frankly, the writer does not feel that a properly applied brush coat of paint will differ greatly so far as its acoustical properties are concerned from a spray coating, but it has been our experience that the spray method ordinarily gives a more uniform and lighter coating than is put on by the average mechanic by the brush method."

Dr. Hyle, Chief of the sound section, Bureau of Standards, in a letter to the writer says:

"We have never made any recommendations, with regard to painting—. From what we know of this material it is probable that a water color dye is all that can be used safely, although it is possible that a very thin coat of non-bridging lacquer or water color paint might be used.

"We have no printed specifications about painting acoustical materials. We have made measurements on a number of painted materials which are listed in our letter circular No. 344, of which we enclose a copy. We would be glad to answer any further questions on the subject that we can, but we do not feel that our information is complete enough to give any general directions which could be applied to all measurements. The point to be borne in mind in regard to painting acoustical materials, is that one must be careful not to close up the pores for it is upon the open pores that the sound absorption depends."

Mr. M. A. Smith writes as follows:

"There seems to be definitely two problems in connection with the general problem of painting acoustical materials. One is the problem of the painter who is trying hard to discover a really satisfactory method of putting the desired colors on a material that is extremely porous and absorbent, or to use the plasterer's term, 'a material of high suction.'

"The other problem is the problem of the acoustical manufacturer who is trying to maintain, after painting, the precious absorption of sound he strives so hard to get and which is so readily ruined by improper painting.

"I greatly fear, from articles I have seen in various paint journals, that the painter's angle is simply one of covering the material. Certainly paint manufacturers have offered paints for this purpose, advertising them specifically for application over sound absorbing materials, which will remove any value the sound absorbing materials might have as sound absorbents after the application of paint.

"I think the answer to the problem lies in having the painter write the manufacturer of the acoustical treatment for instructions as to how to paint it before attempting anything or accepting the recommendations of paint manufacturers. He should discuss this with the owner of the building before bidding and show the building owner the specifications of the manufacturer so that his competitors should likewise be restricted in their calculations."

Again in the American Painter and Decorator for January, 1932, Mr. Smith says:

It is, of course, possible that a material might be made which would provide in a paint structure sufficient absorption to correct the acoustics of a room, but it is hardly probable. All of the useful acoustical materials have considerable thickness. None of the efficient ones are less than ½ inch in thickness. One can hardly conceive of a paint that thick. At the present time there is no known paint product which will provide acoustical absorption in useful amounts."

Our discussion and determination of acoustical quality involves the comparison of sound absorption coefficients. These are difficult measurements to make and there are not more than one-half dozen laboratories in the country whose figures are recognized. In fact, acoustical manufacturers have recently agreed among themselves to use the results of measurements at one laboratory only as a basis for comparative values of absorbents. In general, a large sound chamber and carefully calibrated apparatus is required for accurate work.

The sound absorption coefficient of a material is defined as the fractional part of the energy of a sound wave which is absorbed at each reflection. This branch of applied science is new and in a state of development. Most of the figures listed

are determined by the so-called reverbration method, some with organipipe sources of sound and others with vacuum tube oscillator and radio loud speaker.

Table 1

Adsorption Coefficients for Frequencies

Material.	128.	256.	512.	1024.	2048.	4096.	Year.	Authority.
Acoustex, 1½ in. thick, No. 70	0.16	0.34	0.75	0.85	0.84	...	1931	B.S.
6 coats spray paint	0.14	0.30	0.74	0.90	0.85	...	1931	B.S.
Brickwall, 18 in., unpainted	0.024	0.025	0.031	0.042	0.049	0.070	1900	W.C.S.
painted	0.012	0.013	0.017	0.020	0.023	0.025	1900	W.C.S.
Acousti-celotex, single B, ⅝ in. thick	.08	.18	.48	.63	.75	...	1931	B.S.
brush painted, 4 coats	.07	.20	.46	.72	.87	...	1931	B.S.
Acousti-celotex, double B, ¹¹⁄₁₆ in. thick	.15	.24	.62	.76	.73	...	1931	B.S.
brush painted, 4 coats	.13	.26	.62	.82	.91	...	1931	B.S.
Acoustolic (Martex), nailed on 2x4's, spaced 2 feet on centers; without surface treatment	.44	.24	.31	.44	.48	...	1930	B.S.
Tinted with water soluble aniline color	..	.29	.28	.41	...	...	1930	B.S.
Tinted with water color paint	.40	.33	.31	.38	.37	...	1930	B.S.
Calicel type AA, 1 in.	.23	.33	.72	.75	.71	.46	....	ERPI
1 coat lacquer	.24	.32	.71	.73	.70	.48	....	ERPI
2 coats lacquer	.22	.35	.70	.76	.72	.48	....	.....
Ceramacoustic tile, 1½ in. thick, cemented to sheetrock	.34	.48	.64	.67	.66	...	1932	B.S.
spray painted, 4 coats	.28	.49	.62	.63	.68	...	1932	B.S.
Maizewood tile, 1½ in. thick, saw cuts on surface	.23	.41	.64	.84	.73	...	1932	B.S.
1 coat size, 2 coats lead and oil paint.	.21	.42	.64	.76	.73	...	1932	B.S.
Rockoustile, type A, 1 in. thick painted on ¹¹⁄₁₆ in. x 2 in. furring strips 12 in. o. c.	.05	.39	.86	.73	.62	...	1932	B.S.
painted 1 spray coat and 3 brush coats	.11	.45	.85	.64	.55	...	1932	B.S.
Rockoustile, type A, ⅝ in. thick, unpainted on ¹¹⁄₁₆ in. x 2 in. furring strips 12 in. o. c.	.04	.23	.83	.76	.73	...	1932	B.S.
painted 1 spray coat and 3 brush coats	.07	.33	.85	.67	.52	...	1932	B.S.
Sanacoustic tile on ferrin strips, ¹¹⁄₁₆ in. thick, unpainted	.19	.64	.87	.87	.80	...	1931	B.S.
painted 3 brush coats	.17	.49	.84	.79	.86	...	1931	B.S.
Stuccoustic plaster XB, ⅝ in. thick on base coat gypsum plaster	.29	.53	.59	.73	.72	.66	1932	B.S.
spray painted, 3 coats coustilac	...	...	.59	...	...	...	1932	B.S.
Stuccoustic plaster base coat BB ½ in. thick on base coat gypsum plaster. formula BB, ½ in. thick, spray painted 5 coats cold water paint	.14	.16	.49	.59	.61	.53	1932	B.S.
TMB soundex tile, ¾ in. thick, cemented to sheetrock with semi-plastic cement	.04	.22	.45	.72	.75	...	1931	B.S.
same as above, brush painted 3 coats lacquer	.14	.21	.43	.68	.77	...	1932	B.S.
same as above, brush painted 6 coats lacquer	.19	...	.46	...	...	...	1932	B.S.

Paints Used in Tests

Mr. Chrisler, of the Bureau of Standards, in a private communication to the author, has given the following information as to the paints used in the above tests:

Material.	Paint.	How applied.
Absorbex type B	Lithopone	Spray gun.
Acoustex 1 inch thick	Special paint made by Pittsburgh Plate Glass Co.	Spray gun.
Acousti celotex single B	White lead and oil	Brush.
Acousti celotex double B	White lead and oil	Brush.
Acousti celotex triple X	Sunflex	Brush.
Ceramacoustic	Special paint	Spray gun.
Maizewood tile	White lead and oil	Brush.
Rockoustile type A	Sherwin-Williams	1 coat spray gun.
	Flat tone	3 coat brush.
Sanacoustic tile	Sherwin-Williams	Brush.
	Flat tone	
Stuccoustic plaster formula XB	Coustilac	Spray gun.
Stuccoustic plaster formula BB	Sunflex	Spray gun.
TMB soundex	Non-bridging lacquer	Spray gun.

It would appear from the above tests that if acoustic absorbents are carefully painted, their efficiency as correctives is not seriously impaired. The Sabine test alone shows what paint will do to a finely porous surface when covered with paint even though the paint may have been somewhat inelastic and in good condition. On the other hand, many of the materials as painted are of such a character that their surface effects are gained by large holes, slots and other means of allowing the sound to reach the interior of the body. Obviously they must be grossly mistreated before their efficiency is affected by paint. Absorbers like plasters and pressed fibrous materials without large holes in the surface must be carefully painted. As stated above, acoustic plasters are becoming increasingly important in this field so that the problem of painting them also becomes important.

One slight indication seems to be apparent and while it lacks sufficient evidence to justify a conclusion, it is worth noting. The use of paint on those absorbents which have irregular surface pores, seems to increase the absorption at the lower frequencies and decrease it at the higher frequencies. This checks somewhat with experience and observed fact although it does not seem to check with some of the mathematical calculations. Shrinking down the average size of the surface pores may produce this effect.

It is difficult to do any experimental work which will prove of any great value in our study of paint and acoustic absorption. Rather some tests may show the range of results likely to be encountered in the application of paint to acoustic materials. All results of this type should be strictly comparative. Any absolute measurements are very difficult and expensive to make and would appear to be unnecessary and not as accurate for our comparison. Hence, a comparative method both as to materials and measurement was devised.

If any single unit area of material is measured for absorption and then painted and measured again, we get a direct loss or gain due to the paint. Using another unit area and another paint will give similar figures for the second paint but we can not strictly compare the effects of the two paints because of possible surface differences in the base material. A single unit area of Rockwall Acoustical Plaster was chosen as the base material. Instead of actually painting the plaster, a porous membrane was used which was sufficiently uniform to allow painting in different ways and this membrane then placed on the surface of the plaster and the absorption of the combination measured. A loosely woven burlap was chosen as the membrane because in appearance it resembled many acoustic surfaces and yet because of its machine fabrication a number of pieces could be taken with the expectation that they would be identical in behavior.

It was decided to compare by acoustic measurement, first the plaster itself, then the plaster covered with the burlap membrane, and finally a burlap membrane painted. The paints tested consisted of a sprayed oil acoustic paint, a sprayed casein paint, a brushed flat wall paint, a heavy shellac coating, and a coating of a very viscous resin. The resin was used in a coating which completely sealed the pores but should give maximum effect of inelastic compressibility. The shellac coat was to give the effect due to a harder resin.

The brushed-on paint would illustrate the job which might be obtained by a decorator not conversant with the needs of an acoustic material. The two spray tests were with paints being satisfactorily used at the present time on commercial products.

The tests were made for the author by Dr. Barss, of Barss, Knobel & Young, Boston. The apparatus used is strictly a comparative method and utilizes the so-called intensity method. A definite sound imput is established at the frequency of sound under test, and the output measured. The output is determined by the acoustic absorption of a material being tested, other things being equal. The absorption figures as recorded are translated by comparison with known standards of absorption and use of a suitably corrected formula. The writer has had some opportunity to compare results obtained with this apparatus, first with results on similar plaster at the Bureau of Standards and second with the results of a unique field test carried out for the supervising architect's office in the new Post Office Department building in Washington. The comparisons were sufficiently favorable to warrant using this method for the tests outlined on the paint materials.

Table 2 gives the results obtained by this comparative method. The base was one-half inch of rockwall acoustical plaster on a sanded brown coat and all on standard rockwall gypsum lath. The burlap was sewed tightly against the face of the acuostical plaster. The temperature of the test room was 77° F., and the relative humidity 72 percent.

In the first place in discussing the above results, we can consider, or at least assume, that the membranes were tested in such close relationship to the plaster that there was no drum-head action. There is a slight question of this in the result with the shellac and the figures may be slightly high. Next, the brush coat is on heavy such as a painter might put on who was interested only in coverage and decoration. There are plenty of such jobs to be seen, although it is to be hoped that they may be fewer from now on. The paint did not compleetly seal the surface, so the plaster absorption is still somewhat effective. The resin coat gave complete coverage and sealing of the pores, so that the principal effect is due to the high viscosity or inelasticity of the membrane. It is also true that the porosity of the membrane beneath helped to some extent.

It is sufficient for our study that these tests show the care which should be taken in painting the surfaces of acoustical absorbents. The casein paint appears to give slightly better results than the oil paint because there is less tendency to bridge over and to matte the surface together. Other things being equal, the light reflection is higher than from the oil-painted surface. This is of considerable importance, because with from 15 to 30 percent of the surface of an acoustical absorbent given over to holes or pores, it is essential that the remaining surface be as bright as possible, otherwise light reflection is cut down and tints loog grey and dull. These observations on the value of casein paint are checked by results of tests at the Electrical Testing Laboratories and the tests by Curtis Lighting Institute mentioned earlier in this paper.

In conclusion, this paper stresses the fact that in painting acoustical treatments, the first consideration must be that of preserving the acoustical absorption of efficiency. The decoration of such treatments must be accomplished by means which will not disturb the sound absorbing qualities. Paints as compounded at present have insufficient porosity to be effective as acoustical correctives. It is the purpose of this paper to point out the problems involved in painting aucostical materials and to urge a thorough understanding of the problem before haphazard or ill-advised recommendations are made to decorators or painting contractors.

Finally, the author is deeply indebted to those individuals whom he has quoted in this paper, to H. B. Gardner, of the Atlantic Research Associates, for work done on the paper, and for the samples of material submitted by the Atlantic Gypsum Products Company, the United States Gypsum Company, the Celotex Company, the Armstrong Cork Company, and Johns-Manville.

Table 2

Sample.	256.	512.	1024.
½ in. Rockwall acoustical plaster	0.31	0.49	0.81
Same covered with plain burlap	0.32	0.51	0.83
Same covered with burlap sprayed with two coats Sunflex	0.30	0.50	0.83
Same covered with burlap sprayed with two coats Acoustex paint	0.28	0.49	0.81
Same covered with burlap brushed with two coats flat wall paint	0.24	0.36	0.60
Same covered with burlap brushed with two coats shellac	0.23	0.30	0.55
Same covered with burlap coated with heavy coat glyptal resin	0.12	0.18	0.35

Fourth Session, Friday Afternoon

At the end of the Friday afternoon session, George B. Heckel, secretary, presented a resolution which had been approved by the advisory committee, deprecating the practice of certain raw material interests in giving formulae and other data to dealers and others. Poor products, price-cutting and dumping were some of the evils listed as consequences of the practice. The resolution followed the line of the one adopted earlier in the year by the New York Club. The federation adopted it as read.

The rest of the afternoon was given over to a continuation of the original papers.

New York Club's Paper

The New York club presented the following paper which had been prepared by William DeCamp and J. E. McE. Sanderson on the basis of the past year's investigatory work:—

Clarifying and Straining of Surface Coatings

It seems hardly necessary to point out to paint and varnish production men the necessity of clarifying or straining. To anyone who has felt the wrath of a customer because of specks in a paint product, clarifying and straining are operations of major importance. In spite of this, however, they have received little attention compared to that devoted to other portions of manufacturing procedure such as mixing, grinding, or cooking. With this in mind we are bringing before you this summary of methods now in use by the industry, with no claims of originality, but merely representing the experiences of a number of our members. We present them in the hope of stimulating discussion of the subject and perhaps of uncovering some methods or equipment for the purpose which will be superior to those which we have found.

The first point we would like to stress is that here is the perfect illustration of the old adage that "an ounce of prevention is worth a pound of cure." The cost of filtering and straining in time, labor and wasted material is out of all proportion to the actual amount of dirt removed. Therefore, the first step is to avoid contamination just as far as possible.

In clear varnishes and lacquers the insoluble particles which cause turbidity come mainly from the raw materials and to a lesser extent from products of reaction and contamination from dirty equipment. Filtration troubles may therefore sometimes be reduced by changes in formulation. Thus, low grade natural resins, which are very dirty, may be replaced by a cleaner grade of the same resin or by a synthetic type. Refined oil which does not break on heating should be used instead of raw oil. Oil-soluble metallic soaps may be used as driers instead of oxides or other compounds which only partially take up in the varnish. Proper cleaning of kettles, receiving tanks, pipelines, and pumps will avoid unnecessary accumulation of skins. As the amount of dirt to be removed is reduced the volume of varnish which can be run through before cleaning of the filter is required can be increased.

In pigmented products instead of removing all suspended particles we want to take out only those above a certain fineness. This is a still more difficult problem and renders it all the more important to hold to a minimum the amount of coarse particles which must be strained out. It pays to strain all liquids just prior to mixing with pigments, to scrupulously clean mixers, mills and other equipment, to protect the material from drying out in the course of manufacturing, and to exercise great care to secure fine grinding. In rare instances it is more economical to rush the grinding and spend more time on straining, but the reverse is more generally the case.

Gravity Settling of Clear Products

The dirt contained in varnishes, resin solutions, and clear lacquers is usually so fine and flocculent as to remain in suspension almost indefinitely and involve a large loss of good material along with the dirt when it finally settles sufficiently hard to remove. However, settling for two or three days will often remove most of the coarse dirt and make the removal of the balance that much easier. Also, after filtering or clarifying hot varnish and allowing it to stand a flocculent material will separate out which can be removed from settling. This is one of the reasons for ageing high grade varnishes.

Filtering

Filter presses were universally used for the removal of dirt from varnish twenty years ago and are still used where extreme clarity is desired as well as for certain thick or highly volatile products which are difficult to clarify by other means.

The press generally used for varnish is the flush plate and frame type. The filtering medium is usually cloth woven tightly enough to retain the dirt without clogging too easily. When extra clarity is desired the cloth is supplemented by facing it with filter paper. To operate the press a cloth long enough to cover both sides is thrown over each plate, holes being punched in it where it covers the eyes. The heads are covered with cloths which are necessarily one-half as long as those used on the plates. A frame is placed on the press next to the fixed head, then a plate and frame alternately until all are in the press. It is closed and squeezed together by a ratchet and screw. The varnish is pumped through the channel formed by the eyes in plates and frames, to the interior of each frame, through the cloths and out. The thickness of dirt cake sufficient to clog the press is less than the thickness of the frame. Varnish is usually filtered hot on account of redeuced viscosity. However, high grade varnishes are occasionally filtered after ageing, in which case they are handled cold to avoid having any precipitated material go back in solution with heat.

The great difficulty in filtering varnish is that the dirt to be removed is so flocculent and slimy that a comparatively thin layer packed on the cloth or paper will clog it, stop the flow and build up excessive pressure which sometimes breaks the cloth and allows dirty material to flow through. The addition of diatomaceous earth to the varnish builds up a porous layer on the cloth and permits filtering of a larger volume and at greater speed without clogging. With this method some firms find it possible to discard paper entirely and substitute tightly woven wire for the filter cloth and still get good clarity. Felt sheets have also been used instead of filter cloth with satisfactory results.

Cleaning the Presses

As the plates on an ordinary filter press hold a considerable volume of varnish its use for small batches involves either a large waste or contamination with other varnishes. When the press is taken apart for cleaning the varnish left in it drops into a pan underneath and is returned to the receiving tank to be pumped through with the next lot. The dirt sticks to the cloths and has to be scraped off, after which the cloths are washed in a laundry machine. Sometimes turpentine or mineral spirits is used for this purpose, although better results are achieved with a hot solution of trisodium-phosphate. The time and labor required for cleaning cloths and setting up a filter press are more than required for a centrifugal but may be offset by a better clarity of the product.

A filter press of radically different design has been in successful operation for the last few years by several varnish manufacturers. It consists of three large double faced plates suspended in a closed rectangular tank, built to withstand pressure. The dirty varnish is pumped into the tank, flows through both faces to the inside of the plates from which the clean varnish is withdrawn, leaving the dirt on the outside of the plates. The face of the plates is a twill woven monel metal screen, but the secret of successful operation lies in the use of a specially prepared asbestos fibre to build up a filtering medium of proper density. To start the press about three pounds of this asbestos is mixed with about 50 gallons of varnish and circulated through the press until the varnish comes out the desired clarity. Batches of 1,500 to 2,000 gallons of quite dirty varnish can then be run before the plates clog. The cleaning operation is very quick and easy as the layer of asbestos and dirt peels off the plate almost like a sheet of cloth. There is practically no loss through varnish drying out or being retained in the press. This type of filter press occupies very little floor space and is light enough in weight to be portable if mounted on a four-wheel truck. It is so efficient that one concern using it was able to get absolute clarity in dammar solutions, good oil tank settlings, and other products which had been found absolutely impossible with other equipment.

Centrifugal Clarification

Centrifugal clarification is now used for many clear varnishes and lacquers. Various machines differ radically in design but all operate on the same principle, namely, throwing the dirt out by a centrifugal force many times more powerful than gravity so that the results are correspondingly more rapid than settling.

The centrifugal machines first designed for clarifying varnish were complicated with a great number of parts and were correspondingly difficult to take apart and clean. Some of them took out most of the dirt by centrifugal force and then forced the varnish through paper to remove the balance. This, however, was found to be unnecessary and modern machines are both simple and efficient.

One of the machines in general use has a long, narrow bowl hung from a single bearing at the top by means of a flexible spindle. A bushing at the bottom serves

as a guide to prevent vibration until the bowl gets up to speed. Drive is by steam turbine, belt or motor connected to the top of the spindle. The varnish is pumped in through a jet at the bottom and emerges through the discharge opening at the top leaving the dirt clinging to the inside of the tubular bowl. A counter is used to check the speed of the bowl which is about 15,000 to 17,000 revolutions per minute for ordinary varnishes. A band brake around the bowl enables it to be stopped quickly. The long, narrow bowl is comparatively light in weight and is very easy to handle and clean. Ordinarily dirt can be readily removed with a round brush while for hard caked sediment a spiral scraper is provided. The design and construction of the machine not only provides high operating efficiency but also low upkeep cost as it does not easily get out of balance.

Another clarifier makes use of a short, large diameter, double bowl mounted on a vertical shaft. The varnish enters the inner bowl first where the bulk of the coarse dirt is thrown out then goes to the outer bowl where the greater centrifugal force, due to the larger diameter, throws out the finer particles and insures very thorough clarification. This has a further advantage in retaining practically the full centrifugal force to the end of the run when the inner bowl is full of dirt. In machines with a single bowl, as the dirt layer builds up, the effective diameter and consequently the centrifugal force is decreased accordingly. In this type of clarifier the bowl is operated at 5000 to 6000 R.P.M. for ordinary varnishes. Drive is by steam turbine belt or direct connected motor. A brake is provided for quick stop. The machine is rugged and well lubricated and maintenance costs are low.

Centrifugal clarifications of varnishes and clear lacquers removes the dirt almost as completely as filter pressing and does it more rapidly and at a lower cost. The equipment occupies less space and can be mounted on a truck if desired to move it from one department to another. Centrifugal clarifiers can also be utilized for materials like liquid driers, and asphalt varnishes which are difficult or uneconomical to filter.

Selective Treatment

In clarifying oleoresinous varnishes the problem is to remove the last bit of suspended solid. Other materials require selective clarification to remove some solid particles and leave the balance. Shellac varnish, for instance, contains dirt to be removed and wax to be left in suspension. Flat varnishes and lacquers present a similar problem. This can be done by adjusting the centrifugal force so that it will throw out the particles it is desired to remove and leave the balance. This is done by adjusting the rate of feed as well as by changing the speed of the bowl to fit that particular product. For this purpose the machine is provided with variable speed drive. In some instances, a variable speed motor is used, but this does not allow as many graduations as the variable speed drive.

Occasionally varnish contains specks of gelatinous material such as partly dissolved metallic soap. Running it through a colloid mill will disperse such material to a satisfactory degree of fineness for such semi-clear products as flat varnish or, in some cases, to effect complete solution.

Straining, through wire screen or cloth, will of course remove only comparatively coarse dirt and is therefore seldom used for clear varnishes except as an added precaution to remove particles of skin when filtered varnish is drawn from a storage tank.

Straining Pigmented Products

The problem in cleaning clear varnishes and lacquers is to remove all suspended particles. With pigmented products it is to remove what is ordinarily a small amount of coarse material and leave the properly ground pigment in suspension. Theoretically this should be a simple procedure based merely on the selection of a strainer with openings of the correct size. Actually we all know of the difficulties attendant on maintaining flow through any strainer with apertures fine enough to retain the coarse particles we wish to remove.

Cheesecloth stretched across a frame or supported on a coarse screen, is probably the most commonly used strainer. When fine work is desired several thicknesses are used or a layer of cotton is used between sheets of cheesecloth. The tendency for lint to contaminate the material being strained may be remedied by sizing the cloth with shellac, nitrocellulose or glue, depending on the product being handled. Muslin and silk cloth are better for straining than cheesecloth but quite expensive even if washed and used several times. Straining through layers of cloth, particularly if a layer of cotton is used between, is a very slow procedure involving a high percentage of wasted material, especially with viscous highly pigmented products. Scrapings with a blunt wood paddle helps a little toward preventing clogging; brushes or metal scrapers are too likely to tear the cloth. The usual support for cheesecloth and cotton straining is quite shallow. The pressure may be increased by the use of a deep strainer or by enclosing it so that pressure can be applied. This will not operate satisfactorily if the amount of coarse dirt is large enough to clog the strainer.

Wire screen is considered by some production men to be the best straining medium for general use. It should be clamped on a frame which stretches it tight and permits its easy removal for cleaning or replacement.

The straining of ordinary paints is a comparatively simple process. Screens of 40 mesh are sufficiently fine, the paint runs through fairly easily, and a little scraping or brushing will keep the screen from clogging. Such screens can be woven of fairly heavy brass wire and are correspondingly durable. For a little finer work a good screen to use is 80 mesh twilled weave monel metal. This has openings equivalent to a standard 100 mesh bronze wire but is much more durable.

To remove the dirt from enamels often requires straining through screen of 150, 200, or even finer mesh. Such screens clog quickly and are easily damaged. Various devices have been tried to strain through fine screens faster than gravity flow. One of these is to use a vertical revolving cylindrical strainer so as to push the material through by centrifugal force. Even when nested screens are used, ranging from coarse to fine, this type of strainer clogs very quickly. A somewhat more successful application of centrifugal force utilizes a series of horizontal screens mounted to rotate around a vertical axis. The dirt is rolled continually toward the outer edge and retained while the clean material passes out through the screen.

Variety in Construction

In another strainer design the vertical screen is stationary while the material is kept in motion by paddles which do not touch the screen. The wire is stretched around a drum and is easily detached for cleaning.

Another strainer makes use of compressed air blown through the screen from underneath at regular intervals to keep the dirt from clogging it. The pulsations of air are governed by a valve rotated by a small motor.

The device in most general use to speed up straining is to vibrate the screen horizontally or vertically with a small electric motor and eccentric. This gives very satisfactory results even with very fine screens. To avoid breakage it is customary to mount screens of 150 mesh or finer with a support of coarse rolled screen or perforated sheet metal. Instead of fine wire strainers, cheesecloth may be used in the vibrator with a similar support.

After removal of skins and similar coarse dirt with a strainer of moderate fineness the product may be run through a colloid mill or a single roll mill for a final breaking down of pigment agglomerates. This, however, is a remedy for carelessness in the original grind which should not usually be necessary.

Centrifuging Pigmented Products

The application of centrifugal separation to pigmented products is an entirely different method of accomplishing the same purpose as straining. To be successful the coarse particles of dirt, skins and agglomerates must be thrown out by centrifugal force more readily than the finely ground pigment which it is desired to retain. This depends not only on relative size but also on specific gravity and wetting qualities. In the case of an enamel containing a single pigment of fine particle size the coarse particles of dirt can be readily removed. On the other hand, in a mixture of light and heavy pigments such as carbon black and chrome yellow the fine particles of the yellow are thrown out with the coarse particles of black and the resultant product is off-shade and deficient in opacity. The same thing applies to coarse particles of skins and flocculent dirt in an enamel made with a heavy pigment which does not wet well and consequently settles quickly. In other words, centrifugal machines can by no means be universally applied to pigmented products, but within definite limits they do have many uses and give excellent results. Speeds suitable for pigmented products range from 30 to 100 percent of the rated speed for complete clarification of varnish. Thick enamels can often be strained or clarified to better advantage if first heated moderately to reduce the viscosity.

For handling lacquers or other highly volatile products, either clear or pigmented, a centrifugal machine should be completely enclosed to prevent loss by evaporation, clogging of the outlets and waste of the product.

Adapting the Method to Product

As may be noted from this brief description, there are really only two methods for the removal of coarse particles from paint products, that is (a) straining through a screen which may range from tightly woven cloth to coarse wire mesh, or (b) settling by gravity or centrifugal force. The problem of the production man is to select the right equipment and method for best results with each particular product, taking into consideration the quality of finish which must be attained as well as the time, labor, and material cost of the process. Suppose, for example, an order is received at 2 p. m. for 1,000 gallons of black lacquer to be filled in drums ready for shipment at 5 p. m. The paste is ground but the lacquer must be mixed, strained and filled in three hours. A high quality finish is required and it is too viscous to run through a clarifier. This problem confronted one of our members recently and the shipment went forward on schedule. I will leave it with you to solve individually.

Northwestern Club's Paper

The test fence committee of the Northwestern club presented the following paper prepared by Dr. F. L. Browne:—

Priming-Coat Reductions for Painting New Wood Surfaces

The exposure tests with which this report is concerned were described in detail in a first progress report published in the Proceedings of the Scientific Section, American Paint and Varnish Manufacturers' Association, circular 404, page 596 (1931), and a second progress report describing conditions after ten months service was published in the Official Digest of the Federation of Paint and Varnish Production Clubs, No. 121, page 1068 (1932). The reader is assumed to be familiar with these prior reports.

The principal object of the study is to show how far the serviceableness of paint coatings depends upon the proportion of pigment, linseed oil, and turpentine in the priming-coat paint, to discover the optimum priming-coat reduction, and to determine whether the priming coat should be reduced differently according to the nature of the softwood painted, taking both two-coat and three-coat painting into consideration. The tests were made on Norway pine, white pine, western red cedar, and redwood. Three types of linseed oil paint were used, all in the form of semi-paste paints; they were white lead paint, a lead and zinc paint, and a titanox and zinc (lead-free) paint. Painting with an aluminum primer made with a bakelite varnish vehicle was also included and to determine whether the effect of this primer is to be attributed to the aluminum or to the varnish three white primers made with this varnish were tried.

Since the second progress report the committee has met to inspect the fence twice, once in June and once in September, 1933. The coatings were 26 months old at the last inspection. Flaking of some of the coatings of all three types of white paint has begun on the south side of the fence and there is some failure in integrity of the lead and zinc paint on a few test areas on the north side.

Although it is of interest to report the present status of the tests at this time the committee cannot emphasize too strongly that the study is still far from complete and that great caution should be exercised in drawing conclusions from the present indications. Future developments might make it necessary to alter materially many generalizations that could be made now.

Order of Initial Failure on the Four Woods

On the south side of the fence flaking of the coatings of all three types of white paint has now progressed far enough to reveal distinct differences between the four woods in the rate at which failure of coatings by flaking from the bands of summerwood sets in. The order of the woods is the same for each of the three paints, namely, there is least failure on redwood, only slightly more failure on red cedar, distinctly more failure on white pine, and by far the greatest amount of failure on Norway pine. With white lead paint, white pine falls closer to red cedar and redwood than to Norway pine but with the two paints containing zinc oxide, and especially with the paint containing no white lead, white pine falls closer to Norway pine than to cedar and redwood.

These findings are strictly in accord with the results of tests by the Forest Products Laboratory (see for example Federation of Paint and Varnish Production Clubs, Official Digest, No. 95, page 106 [1930]). The data of table 1 which gives average values for certain physical properties of the boards with which the test panels were made, are significant in this connection.

These data in the light of the tests by the Forest Products Laboratory indicate that Norway pine shows most failure because it is the heaviest or the four woods and has the largest content of summerwood and because all of the boards have either flat grain or grain at 45 degrees (half-way between flat and edge grain). White pine proves worse than redwood or cedar because of the predominance of flat grain boards and because of the deleterious effect on paints containing zinc oxide exerted by the resin in white pine and in Norway pine. Observation of the fence shows also that the high proportion of boards turned pith-side out in the white pine and Norway pine militates against these woods seriously. The superiority of redwood over red cedar must be attributed for the present at least to a beneficial effect of the extractives characteristic of redwood, although the relatively narrow annual growth rings may also exert a significant effect in favor of the redwood.

On the north side of the fence failure of coatings in integrity is confined so far to the lead and zinc paint on white pine and on Norway pine. This failure, however, is unexpected at this stage of the exposure and is not entirely normal in aspect. It may possibly be due to moisture getting in behind the boards through leaks in the fence construction. Although moisture-failure of paint coatings is very rare on test fences, well-authenticated cases of it have been observed.

Table 1

Average Values for Certain Physical Properties of the Boards with Which the Test Panels Were Made

Species.	Density in lbs. per cu. ft.	Annual growth rings per inch.	Percentage of boards that are Flat grain.	Grain at 45°.	Edge grain.	Percentage of boards that are flat grain or grain at 45° and are known to be turned pith side out
Redwood	26.2	36	29	59	12	17
Red cedar	21.5	26	11	34	55	7
White pine	26.8	28	75	24	1	51
Norway pine	28.9	30	49	51	0	41

Relative Behavior of the Three Linseed Oil Paints

It was reported previously that the white lead paint became soiled less rapidly than the other two paints during the first six months of exposure and that it held its gloss longer. By the time ten months had passed the titanox and zinc paint was much cleaner and whiter than the other two paints, both on the north and south sides of the fence. The superiority in appearance of the titanox and zinc paint has continued to the present time.

On the south side of the fence the white lead paint finally became slightly dirtier than the lead and zinc paint but both were sufficiently dirty to require ratings of "poor" in appearance. At the present time both of these paints are somewhat less dirty on the south side than they were at one time and the principal difference between them is that the white lead paint is slightly more spotted (less uniformly discolored) than the lead and zinc paint.

On the north side of the fence soiling of the white lead and lead and zinc paints continued for a longer time and reached a much darker aspect of grayness than it did on the south side. The present appearance of these two paints on the north side calls unquestionably for a rating of "bad" in appearance. The white lead paint is a darker gray than the lead and zinc paint, but is much more nearly uniformly so because the lead and zinc paint is now beginning to throw off the dirt as chalking progresses more freely. The titanox and zinc paint on the north side is almost as clean and white as it is on the south side. A house painted with the titanox and zinc paint would present practically the same appearance on all sides but houses painted with either of the other two paints would show marked differences in appearance on different sides and between shaded and unshaded areas on the same side.

All three paints are now chalking on both north and south sides, but the white lead paint on the north side has only just begun to chalk. On the south side reticulate checking of the white lead paint is easily visible, but on the north side it cannot be seen until the dirt is washed from the surface. In the lead and zinc paint on the south side checking is to be seen only with the aid of a microscope or magnifying glass and is in the "parallel" stage; checking is absent on the north side. The titanox and zinc paint does not show checking on either side.

Depth of Checking

It is difficult to say from direct observation how far the checking in white lead paint and lead and zinc paint extends through the coatings. Since the checking in the lead and zinc paint can be seen only with magnification it is presumably shallow. In the white lead paint, however, it probably penetrates completely through the coatings because on redwood and red cedar careful observation discloses small spots of brown discoloration where rainwater has leached colored extractive from the wood, access to the wood obviously being gained through the paint checks. The extent of such discoloration, however, is not sufficient to mar the appearance of the coatings.

Three kinds of fissures other than checking are now to be seen. Both of the paints containing zinc oxide exhibit the small parallel cracks that Browne calls "slits" (American Society for Testing Materials 3011, 852 [1930]). Flaking of these two paints over the bands of summerwood proceeds by a breaking off of the coating at the loosened edges of such slits. In white lead paint, on the other hand, flaking proceeds by detachment of small particles of coating marked off by recticulate checking. Besides slits there are occasional paint cracks of a longer type that seem much slower than slits in giving rise to flaking of the coating but, like slits, they are confined to the two paints that contain zonc oxide. Slits and cracks are very irregular in distribution, that is, they may be numerous on one board and completely absent on other boards in the same test area. Checking, on the other hand, is always uniformly distributed. The third kind of fissures corresponds exactly with weathering checks in the wood beneath the coating. Such fissures are not considered in rating the coatings for integrity but are considered evidence that the coating is no longer furnishing adequate protection against wood weathering. Wood checks of this kind are more numerous in Norway pine and in white pine than in the other woods and are more numerous under white lead paint than under either of the paints that contain zinc oxide.

Extent of Flaking

Of the three paints the titanox and zinc paint on Norway pine and on white pine exhibits the most serious progress in flaking from the bands of summerwood. It should be pointed out, however, that the coating of titanox and zinc paint was thinner to begin with than the coatings of the other two paints (see table 3 of the first progress report). Apparently, one of the disadvantages of paints with unusually good hiding power is the temptation to apply them in thin coatings. Thus, the painter applied the third coat of titanox and zinc paint in these experiments at 1,225 square feet per gallon; the surfaces were hidden thoroughly and still remain hidden, but the durability of the coatings is undoubtedly less than it would have been if the third coat had been applied more generously. On redwood and red cedar, on the other hand, the titanox and zinc paint is perhaps in sounder condition at the present time than either of the other paints. With respect to integriy of the coatings the white lead and the lead and zinc paint seem to be relatively in the same condition on the average. In the white lead paint the flaking from the summerwood is of much fined grain and therefore less conspicuous than it is in either of the paints that contain zinc oxide, but careful inspection shows that fully as much wood has been left bare by flaking of the white lead paint as has been exposed by flaking of the lead and zinc paint.

It is of interest to point out that there is much more difference in the extent of failure in integrity of any one of the paints on the four woods than there is between the three paints on any one wood. Thus, for example, there is much more difference in the condition of the coatings of titanox and zinc paint on Norway pine and on redwood than there is between the coatings of white lead paint and of titanox and zinc paint on Norway pine.

Two-Coat and Three-Coat Painting

Judging by the present extent of flaking of the coatings from summerwood the relative condition of the two-coat and three-coat jobs is as recorded in Table 2. With the lead and zinc paint the two-coat jobs seem to be proving slightly less durable than the three-coat jobs applied on neighboring areas of the same boards. With the other two paints, however, the two-coat jobs over primers 2-1 and 2-2 seem to be lasting as well as the three-coat job while the two-coat jobs over primer 2-3 are distinctly worse. Primer 2-1 was mixed without any turpentine,

primer 2-2 with a moderate amount of turpentine, and primer 2-3 with much turpentine. Apparently the proportions of pigments, linseed oil, and turpentine are more significant than the number of coats applied, but it will be well to await further developments before drawing conclusions on that subject.

Table 2

Relative Integrity of Coatings of Two-Coat Jobs as Compared with Coatings of Three-Coat Jobs on Neighboring Test Areas

	White lead paint over primer No.			Lead and zinc paint over primer No.			Titanox and zinc paint over primer No.		
Wood.	2-1.	2-2.	2-3.	2-1.	2-2.	2-3.	2-2.	2-2.	2-3.
Norway pine	better	same	worse	worse	worse	worse	better	better	worse
Red cedar	better	same	same	better	worse	worse	better	better	worse
Redwood	same	same	same	worse	worse	worse	better	same	worse
White pine	worse	same	worse	worse	worse	worse	worse	better	worse

Priming-Coat Reduction

The preceding section reports that in two-coat painting the priming coat thinned generously with turpentine (and containing correspondingly less linseed oil) is proving distinctly inferior to priming-coat mixtures containing either no turpentine at all or only a moderate amount of turpentine. Exactly the same tendency is observed in the three-coat jobs. The primer thinned with the greatest proportion of turpentine is uniformly proving less satisfactory with all three paints and on all woods. On the other hand, the primer mixed without any turpentine is at present showing as good results as any of the priming mixtures, but further developments must be awaited before it will be possible to choose the best of the priming-coat mixtures tried. At present there is no indication that the optimum priming-coat reduction will prove different for different woods or that adjustment in priming-coat reduction will serve to offset differences in durability caused by variations in the nature of wood. In other words, the experience so far offers no evidence in support of the common custom of recommending that painters use different priming-coat mixtures on white pine, Norway pine, redwood, and red cedar.

Aluminum Priming Paint

No coatings are now in better condition than the corresponding ones applied over aluminum priming paint. There is as yet no flaking from summerwood over aluminum primer except on two boards that are obviously unusually difficult to keep well painted. On both of these boards there is only a small amount of flaking on the area primed with aluminum, but a great deal of flaking on neighboring areas primed with white paint. There are a number of panels on which the coating is entirely sound over aluminum primer, but is flaking distinctly from summerwood on neighboring areas painted with white primers.

It was pointed out previously that there was a tendency for the coatings to hold their gloss longer over the aluminum primer. As a result they also held dirt longer, and on the north side of the fence have not progressed quite as far in shedding this dirt. However, the discoloration by dirt tended to be somewhat more uniform and to be cast off again more uniformly over the aluminum primer than over white primers.

Checking of the white paints over aluminum primer follows exactly the same pattern and is no more conspicuous than it is over corresponding areas with white primers. On the south side of the fence the checking in the white lead paint can be seen with the microscope to extend down to the aluminum primer. Over white primers it probably extends down to the wood for reasons that have already been discussed.

Miscellaneous Tests on Units 7 and 8 of the Test Fence

Three primers made with the varnish vehicle used for the aluminum primer, but containing respectively white lead, zinc oxide, titanox B as pigments, are proving less satisfactory under white lead paint than the aluminum primer or than the ordinary white lead primers made with linseed oil. Checking of the white lead paint over the white primers made with the varnish is coarser and more conspicuous than it is over aluminum primer or over white linseed oil primer. There is also some flaking of the coating of white lead paint over the primers made with white pigments in varnish; the flaking is most marked over the varnish primer made with zinc oxide. The flaking moreover is coarser and more conspicuous than the flaking of white lead paint when applied in the customary way.

At the present time the two white lead paints applied in accordance with recommenations of the National Lead Company and of the Eagle-Picher Lead Company, respectively, are behaving in much the same way as the corresponding coatings of white lead paint on Units 1 to 6 of the test fence.

The titanox lead, and zinc paint and the cryptone paint, recommended respectively by the Titanium Pigment Company, and the New Jersey Zinc Company, are much cleaner and superior in appearance to the white lead or lead and zinc paint and are nearly as clean as the titanox and zinc paint. They both exhibit less flaking from summerwood on Norway pine and white pine than the lead-free titanox paint, though both are now cracking and slitting.

Pittsburgh Club's Paper

R. J. Gnaedinger read the paper prepared by the Pittsburgh Paint and Varnish Production Club.

Comparison of Various Pigments and Vehicles in Rust Inhibitive Primers

Metal priming paints usually have two principal purposes, to-wit: Rust inhibition, and binding, that is, adhesion to metal and to top coat. Ability to stand weathering, unprotected by a top coat, is frequently an important secondary consideration, but in our considered opinion is not ordinarily as important a property as either the first two.

The Test

Most metal priming paints are composed of pigment mixtures. In such paints the part played by each pigment is a matter of considerable uncertainty. We have followed, therefore, the precedent set by the A. S. T. M. committee over two decades ago and have used only one pigment in each paint. Ten pigments were tested in this manner.

Believing, however, that the type of vehicle, or rather the pigment-vehicle combination is of maximum importance, we have tested each pigment in each of five typical vehicles.

Three main classes of pigments were selected for this test, as follows:

(a) Basic pigments—on account of their reputed rust inhibition.

(b) Neutral pigments—as controls for comparison.

(c) Metallic pigments—to investigate their merit.

The vehicles include raw linseed oil as an accepted standard. Long oil ester gum and long oil phenolic varnishes and a typical phthalate priming vehicle are included as covering the type of vehicles most generally considered usable. Iodized oil was suggested by a member of our club who had previously conducted some promising experiments with it and who recommended it for further consideration.

The paints, with the exception of aluminum bronze, were all ground in pebble mills and reduced to approximately 30 per cent pigment volume. Aluminum bronze was mixed with each vehicle at the time of application in the proportion of two pounds of the aluminum bronze to a gallon of the vehicle. Additional volatile was added where necessary to facilitate proper spray application at the time of preparing the panels.

Formulae and making directions for vehicles and formulae of the mixed paints are attached to this report as exhibit A.

Five complete sets of panels were prepared on planished iron (see exhibit B) which had been previously rusted and sanded. Two of these sets were on twenty gauge 3x6 inches panels for weatherometer and salt spray respectively. Two sets were on 5½x18 inches twenty-six gauge panels for two separate rest fences and one similar set was reserved unexposed for control.

All application of the paint was by spray. In order to determine the relative value of each pigment-vehicle combination, both as a one coat paint and as a primer to be used under a subsequent top ocat, we have top-coated only one-half of each panel with aluminum bronze in a spar varnish. Each pigment-vehicle combination was given a designating code number composed of one numeral and one letter. The list showing the pigments and vehicles used and the code number assigned to each panel is attached as exhibit C.

Results to Date

The salt spray test is complete after 300 hours. In this test the panels were subjected to a constant spray of a 3 percent salt solution at room temperature, which probably averaged from 70 to 80 degree F. The spraying was done in a totally enclosed metal box.

The weatherometer test is nearing completion after 800 hours in a cycle of eighteen hours light, four hours water spray, and two hours refrigeration.

Only one set of top-coated panels is showing any weathering on the fence. Many of the bare primers are still in excellent condition. At least another year of test fence exposure will probably be needed to differentiate among the better panels.

The keeping quality of the various paints in the package is indicated under exhibit D.

Exhibit E lists the condition of each panel and the rating as of October 1, 1933, after two and one-half months exposure. The upper report for each panel refers to the single-coated portion. The lower report refers to the half of the panel having both primer and top coat. "First or best" indicates the best panel for vehicles with a given pigment. At the end of exhibit E are listed the best pigments for each vehicle. There is also listed an opinion as to the best average pigment regardless of vehicle and the best vehicle regardless of pigment. These latter comments must be considered as opinions rather than as proved facts. The comparative rating of exposed panels is subject to too much dispute today to over stress complicated comparisons such as these. You will note that these later comparisons are omitted entirely on the test fence panels and on the double coated portion of the weatherometer panels because the difference between panels is as yet too slight.

Conclusion

In the comparative evaluation of these panels we noted and tried to differentiate among three types of rusting, namely—edge rusting, spot rusting and channel rusting. This last named rusting was caused by the punching of holes in the panels after the spray job had been completed. The film ruptured in this manner seemed to be more easily lifted away from the metal sufficiently so that a little channel of rust is formed on many of the panels directly below the hole. Of the three types of rusting, it is our opinion that spot rusting is by far the most significant, so far as the prospective value of the paint is indicated. Any type of rusting is, in our opinion, considerably more objectionable than even heavy chalking or discoloration of the primer. The relative importance of these different types of failure was kept in mind when we evaluated the panels as shown on exhibit E.

It is our hope and intention to give a further report, particularly on the results obtained on the test fence at the next convention of the Federation. We appreciate that there are many pigments or vehicles which may exhibit great rust inhibition and may be of considerable merit as primers which we have overlooked in our present test. If anyone, therefore, would like for us to expose panels with one or more of these materials, we shall be very glad to put the panels on our test fences. We would ask, however, that they be prepared on approximately 5½x18 inch panels and that they be forwarded to us as soon as possible since the panels already on exposure will in any case have at least a three months start.

We wish to acknowledge with thanks the services of Dr. J. S. Long for the preparation of the iodized oil.

The Bakelite Corporation for the preparation of the bakelite priming vehicle.

Also the assistance given us by J. E. Heckel in the preparation of the report.

Exhibit A

Formulas and Making Directions for Vehicles and Formulae of the Mixed Paints

Vehicles Used:

A—Raw linseed oil, conforming Federal Specifications Board requirements.

B—50 gallon ester gum varnish of following composition:

One-half of its oil is varnish linseed and ½ is wood oil.

Lead and manganese driers are used.

Fifty percent non-volatie.

Has a 60 Kauri reduction test.

Body C.

Color 6.

C—50 gallon phenolic varnish of the following composition:

Pure phenolic resin, 100 lb.

Tung oil, 50 gal.

Lead acetate, 7.8 lb.

Mineral spirits, 50 gal.

Soluble driers: to give lead as metal, 3.7 gms.; cobalt as metal, 0.3 gm.; manganese as metal, 0.15 gm.; per gallon of varnish.

Place all the oil and resin in kettle and heat to 450°F in thirty to forty minutes. Hold 450°F for ten minutes. Add the lead acetate. Hold 450°F for a 2 to 3 inch string from a cold glass plate (approximately twenty-five to thirty minutes) and thin. Add liquid driers.

Specifications of Phenolic Resin

Specific gravity: 1.10-1.15 (Westphal balance method).

Melting point: 295-315°F (Modification of A. S. T. M. ball and ring method). For comparison m. p. by this method of WW rosin is 174°F and of low acid ester gum is 185°F.

Color: 8L-9 (Hellige glass color standard on solution of 50 percent resin, 50 percent toluol).

Acid number: 55-65 (Resin dissolved in 75 percent benzol, 25 percent alcohol. Titrate with tenth normal alcoholic sodium hydroxide using phenolphthalein indicator).

Rosin: Shall show no test for rosin (Lieberman-Storch Test—Gardner Physical and Chemical Examination 1930, page 661).

D—Glycerol phthalate varnish of the following composition:

Non-volatile vehicle	35%
Phthalic anhydride	20%
Glycerine	9
Raw linseed oil	61
Linseed fatty acids	8
Aluminum sulphate	2
Volatile vehicle	65%
Toluol	20%
Xylol	10
Petroleum naphtha of 48 aniline point	70

Specifications for phthalate varnish:—Non-volatile portion was cooked under pressure at 300°F for two and one-half hours. Then under vacuum at 450°F for one and one-half hours and raised to 550°F, where it was held for one hour.

E—Iodized oil

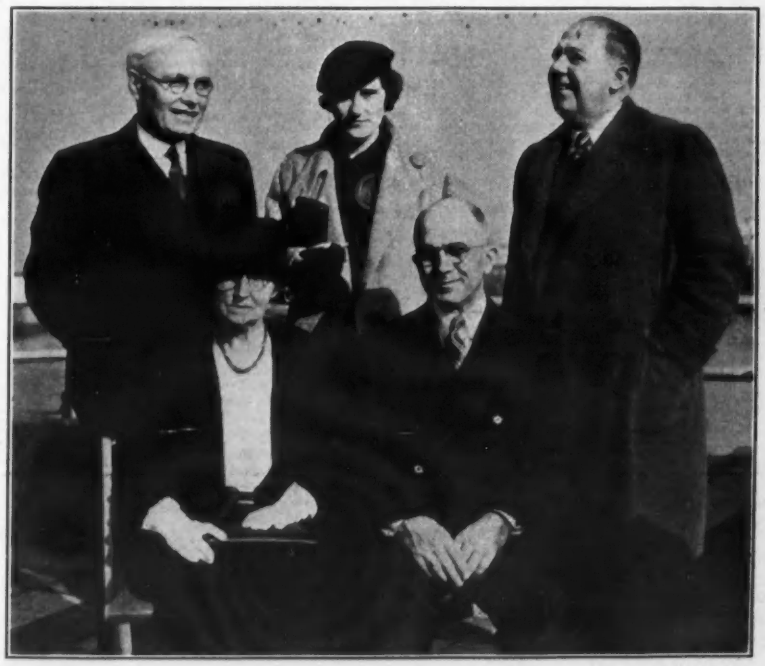
Was iodized to a 3 percent iodine content.

Drier in Mixed Paint Forms

The drier was added to the different batches just before the paint was applied on the panels. To each liquid pigment drier was added to give a concentration of 2.52 grams of lead and 0.315 gram of cobalt per gallon of paint. Poor drying of the aluminum paints, those pigmented with zinc chromate, and those of zinc dust necessitated the addition of drier making the final concentration in these three series 5.04 grams of lead and 0.63 gram of cobalt per gallon.

Formulas Used

	Weight, percent.	Volume, percent.	Weight per gallon.
Red lead	80	30	27.1
Raw linseed	20	70	
Red lead	56	30	
50 gal. ester gum	34	70	16.3
Red lead	69	29.9	
50 gal. bakelite	31	70.1	18.35
Red lead	56	29.9	15.25
Phthalate	44	70.1	
Red lead	78.5	29.85	27.4
Iodized oil	21.5	70.15	
White lead	75.6	30	22.3
Raw linseed	24.4	70	
White lead	60.1	30	15.15
50 gal. ester gum	39.9	70	
White lead	63.4	30	16.8
50 gal. bakelite	36.6	70	
White lead	63.4	30	16.8
Phthalate	50.4	70.2	
Blue lead	75.3	29.9	22.0
Raw linseed	24.7	70.1	
Blue lead	60	30	14.9
50 gal. ester gum	40	70	
Blue lead	63	29.7	16.73
50 gal. bakelite	37	70.3	
Blue lead	49	29.5	13.2
Phthalate	51	70.5	
Basic lead chromate	75.9	29.65	22.4
Raw linseed	24.1	70.35	
B. lead chromate	60.6	30	15.37
50 gal. ester gum	39.4	70	
B. lead chromate	64	30	17.1
50 gal. bakelite	36	70	
B. lead chromate	50.1	30	13.48
Phthalate	49.9	70	
B. lead chromate	74.4	29.9	23.0
Iodized oil	25.6	70.1	
Zinc chromate	61.2	30	13.95
Raw linseed	38.8	70	
Zinc chromate	43.3	30	10.87
50 gal. ester gum	56.7	70	
Zinc chromate	46.8	30	11.55
50 gal. bakelite	53.2	70	
Zinc chromate	33.4	30	9.83
Phthalate 35%	66.6	70	
Zinc chromate	59.2	30	14.4
Iodized oil	40.8	70	
Zinc oxide	72.3	30	19.55
Raw linseed	27.7	70	
Zinc oxide	56.0	30	13.95
50 gal. ester gum	44.0	70	
Zinc oxide	59.3	30	15.1
50 gal. bakelite	40.6	70	
Zinc oxide	45.5	30	12.0
Phthalate 35%	54.5	70	
Zinc oxide	70.6	30	20.0
Iodized oil	29.4	70	
Zinc dust	76.6	30	23.05
Raw linseed	23.4	70	
Zinc dust	61.3	30	15.9
50 gal. ester gum	38.7	70	
Zinc dust	64.6	30	17.35
50 gal. bakelite	35.4	70	
Zinc dust	51.0	30	13.35
Phthalate 35%	49.0	70	
Zinc dust	75.2	30	23.5
Iodized oil	24.8	70	
Black M. oxide	67.4	30	16.55
Raw linseed	32.6	70	
Black M. oxide	50.0	30	12.32
50 gal. ester gum	50.0	70	
Black M. oxide	53.5	30	13.2
50 gal. bakelite	46.5	70	
Black M. oxide	39.6	30	10.85
Phthalate 35%	60.4	70	
Black M. oxide	65.5	30	17.05
Iodized oil	34.5	70	



Chicago World's Fair Record Makers

Seated: Mrs. Robert T. Graham, Compton, Cal., last registrant at Columbian Exposition in Chicago in 1893, and A. E. Stocking, of the DeLore Division, National Pigments & Chemical Corporation, who was the 21,480,142d visitor to the 1933 Century of Progress Exposition—one over the previous show's record.

Standing: C. P. DeLore, of the National Pigments & Chemical Corporation; Miss Marion Lipphardt, niece of Mr. DeLore; and an official of the fair. Miss Lipphardt entered the grounds one under the old record, Mr. DeLore evened it, and Mr. Stocking set the new mark. He got a shower of gifts and a greeting from Mrs. Graham.

Formulas Used

(Continued)

	Weight, percent.	Volume, percent.	Weight per gallon.
Antimony oxide	63.6	30	14.91
Raw linseed	36.4	70	
Antimony oxide	46.0	30	11.3
50 gal. ester gum	54.0	70	
Antimony oxide	49.5	30	12.2
50 gal. bakelite	50.5	70	
Antimony oxide	35.3	30	10.3
Phthalate 35%	64.7	70	
Antimony oxide	...	..	
Ferric oxide	70.4	30	18.28
Raw linseed	29.6	70	
Ferric oxide	53.6	30	13.1
50 gal. ester gum	46.4	70	
Ferric oxide	57.0	30	14.32
50 gal. bakelite	43.0	70	
Ferric oxide	42.6	30	
Phthalate 35%	57.4	70	
Cryptone	65.7	30	15.9
Raw linseed	34.3	70	
Cryptone	48.6	30	11.8
50 gal. ester gum	51.4	70	
Cryptone	52.0	30	12.8
50 gal. bakelite	48.0	70	
Cryptone	37.5	30	
Phthalate 35%	62.5	70	

Exhibit B

Type and Preparation of Panels

The steel used in these panels was purchased under the name of "Planished Iron." It is reported by the manufacturer to be made from a low carbon bessemer steel of approximately 0.10 carbon. The sheets after being rolled are pickled, annealed and cold rolled to secure a smooth, tight finish, free from scale, so that the paint or pigments to be applied upon the panels will adhere properly and smoothly.

These panels were exposed overnight in an enclosed room to hydrochloric acid vapors developed by heating a beaker of hydrochloric on a hot plate.

The next day they were thoroughly washed for several hours in a water spray and dried. Before the paint was applied on these panels they were sanded with 00 sandpaper to remove all loose rust and were again wiped.

It is proper to add, however, that even with these precautions we believe that sufficient lack of uniformity in the degree of rusting may interfere with the results obtained after exposure.

Exhibit C

Pigments.	Vehicles A. Raw linseed.	B. 50 gallon ester gum.	C. 50 gallon phenolic.	D. Phthalate.	E. Iodized oil.
1. Red lead	1-A	1-B	1-C	1-D	1-E
2. Blue lead sulphate	2-A	2-B	2-C	2-D	Omitted
3. White lead carbonate	3-A	3-B	3-C	3-D	Omitted
4. Basic lead chromate	4-A	4-B	4-C	4-D	4-E
5. Zinc chromate	5-A	5-B	5-C	5-D	5-E
6. Zinc dust	6-A	6-B	6-C	6-D	6-E
7. Zinc oxide	7-A	7-B	7-C	7-D	7-E
8. Iron oxide, black magnetic precipitated	8-A	8-B	8-C	8-D	8-E
9. Antimony oxide	9-A	9-B	9-C	9-D	Omitted
10. Blank	....	....	....	....	....
11. Blank	....	....	....	....	....
12. Blank	....	....	....	....	....
13. High zinc sulphide lithopone	13-A	13-B	13-C	13-D	Omitted
14. Aluminum bronze	14-A	14-B	14-C	14-D	14-E
15. Ferric oxide	15-A	15-B	15-C	15-D	Omitted

Exhibit D

Panel.	Condition.	Body.	Settling.	Thinning for spray.
1-A	Good	Medium	Complete settling—soft	None
1-B	Fair	Medium	Completely hard—gummy	None
1-C	Poor	Heavy	Completely settled—hard—gummy	10%
1-D	Poor	Medium	Completely settling—hard	None
1-E	Poor	Heavy	Completely settling—fairly hard	20%
2-A	Fair	Medium	Soft—completely settled	None
2-B	Fair	Medium	Completely settled—gummy	None
2-C	Fair	Heavy	Completely settled—gummy	10%
2-D	Good	Medium	Completely settled—soft	None
3-A	Fair	Medium	Completely setled—soft	None
3-B	Fair	Medium	Slightly gummy	None
3-C	Fair	Medium	Completely settled—soft	10%
3-D	Poor	Medium	Hard	10%
4-A	Fair	Heavy	Completely settled—gummy	None
4-B	Fair	Medium	Completely settled—slightly gummy	None
4-C	Fair	Medium	Completely settled—gummy	None
4-D	Poor	Medium	Completely settled—hard—gummy	None
4-E	Good	Medium	Completely settled—soft	None
5-A	Good	Medium	Some—very soft	None
5-B	Poor	Medium	Hard—gummy	None
5-C	Fair	Medium	Completely settled—very hard	None
5-D	Good	Heavy	None	20%
5-E	Good	Heavy	Slight—very soft	10%
6-A	Fair	Medium	Completely settled—fairly hard	None
6-B	Poor	Heavy	Completely settled—hard—gummy	20%
6-C	Poor	Heavy	Completely settled—gummy	20%
6-D	Poor	Completely livered	None	....
6-E	Fair	Medium	Completely settled—gummy	None
7-A	Good	Heavy	Slight—soft	20%
7-B	Fair	Medium	Complete—soft	10%
7-C	Good	Medium	Completely settled—soft	None
7-D	Fair	Medium	Completely settled—hard	None
7-E	Good	Medium	Very slight—very soft	None
8-A	Good	Medium	Completely settled—soft	None
8-B	Good	Medium	Completely settled—soft	None
8-C	Good	Medium	Completely settled—soft	None
8-D	Good	Medium	Completely settled—soft	None
8-E	Good	Medium	Slightly settled—very soft	None
9-A	Fair	Medium	Completely settled—fairly soft	None
9-B	Fair	Medium	Fairly hard—completely settling	None
9-C	Fair	Medium	Hard—complete settling	None
9-D	Poor	Medium	Hard—gummy	None
13-A	Good	Medium	Completely settled—very soft	None
13-B	Fair	Medium	Fairly hard	None
13-C	Good	Medium	Completely settled—soft	None
13-D	Poor	Medium	Completely settled—hard—gummy	None
14-A	....	.....	Samples not retained	
14-B	....	.....	Samples not retained	
14-C	....	.....	Samples not retained	
14-D	....	.....	Samples not retained	
14-E	....	.....	Samples not retained	
15-A	Good	Medium	Completely settled—very soft	None
15-B	Poor	Medium	Completely settled—hard—gummy	None
15-C	Poor	Medium	Completely settled—hard—gummy	None
15-D	Poor	Medium	Completely settled—somewhat hard	None

Exhibit E

	Salt Spray.	Weatherometer.	Fence
1-A	4th; very heavy edge rusting	5th; most chalking, no checking	2nd
	2nd; slight edge and spot rusting	5th; most stained, film intact	All O. K.
1-B	2nd; heavy edge and some spot rust	3rd; most fading, little chalking	.....
	1st; slight edge and spot rusting	4th; darkened, film intact	All O. K.
1-C	Best; edge rusting	2nd; some chalking, little fading	Most chalking
	3rd; slight edge and spot rusting	1st; equal 4	All O. K.
1-D	Worst; heavy overall rusting	1st; almost perfect	Best; least chalking
	4th; edge and channel rusting	1st; equal 3	All O. K.
1-E	3rd; heavy edge and some spot rust	4th; heavy chalking	.....
	5th; edge and channel rusting	3rd	.....
2-A	4th; very heavy edge rusting	2nd; fading, some chalking	Best
	Best; very slight edge rusting	Best; slightly most gloss	.....
2-B	2nd; edge rusting and some spot	4th; most chalking	2nd; chalking
	2nd; very slight edge rusting	4th; darkest, film intact	.....
2-C	3rd; edge and some spot rusting	3rd; heavy chalking	Worst; rusted
	4th; slight spot rusting	3rd; film intact	.....
2-D	Best; slight edge rusting	Best; fading	3rd; rusted
	3rd; spot rusting	2nd; film intact	.....
3-A	3rd; film half gone	3rd; heavy chalking	3rd; chalking and spot rust
	4th; heavy edge rusting	1st; brightest	.....
3-B	Worst; gone	4th; heavy chalking	2nd; spot rusting
	3rd; heavy edge rusting	2nd; brightest	.....
3-C	Best; but heavy edge and some spot rusting	2nd; some chalking	Least rust, spot
	Best; edge and spot rusting	4th; film intact	.....
3-D	2nd; heavy edge rusting	Best; no chalking or checking	Worst; spot rusting
	2nd; edge and spot rusting	3rd; brightest, film intact	.....
4-A	4th; heavy rusting	5th; fading, rough looking	3rd; more dirt than E
	5th; heavy rust—gone	5th; discolored, film intact	.....
4-B	5th; heavy rust	3rd; fading	Best
	3rd; rust and flaking	4th	.....
4-C	Best; overall rusting	2nd; loss of gloss	.....
	Best; few spots of rust	2nd; bright	.....
4-D	3rd; heavy rust	1st; loss of gloss	Worst; slight rust spots
	2nd; edge rust	1st; brightest	.....
4-E	2nd; heavy rust	4th; fading, rough looking	2nd
	4th; heavy rust and flaking	3rd	.....

Exhibit E

(Continued)

	Salt Spray.	Weatherometer.	Fence.
5-A	5th; rusting edges and center	2nd; good gloss, slight fading	2nd
	3rd; edge rusting	2nd; less bright but less darkening	.....
5-B	Best; very slight edge rusting	4th; fading, no chalking	3rd; slight edge rusting
	Best; slight edge rusting	5th; discolored	.....
5-C	3rd; edge rusting and one spot	5th; fading, no chalking	Worst; edge rusting
	2nd; slight edge rusting and few spots	3rd; some darkening	.....
5-D	2nd; slight edge rusting	Best; good gloss, no fading	Best
	5th; edge and spot rusting	Best; brightest, darkening	.....
5-E	4th; edge rusting	3rd; some gloss, fading	4th; most dirt
	4th; edge and spot rusting	4th; some darkening	.....
6-A	Best; channel rusted	2nd; fading, slight, chalking	3rd
	3rd; slight rust edge and channel	4th	.....
6-B	2nd; heavy rusting edge and channel	5th; fading, chalking	Best; slight edge rusting
	Best; slight edge rusting	5th; discolored, film intact	.....
6-C	3rd; heavy spot rusting	3rd; fading	2nd; slight edge rusting
	2nd; slight rust edge and spot	Best; brightest	.....
6-D	4th; heavy spot rusting	Best; some loss of gloss	Worst; heavy spot rusting
	4th; edge and spot rusting	2nd; some darkening	.....
6-E	3rd; edge and spot rusting	4th; fading	4th; spot rusting
	5th; spot rusting	3rd	.....
7-A	3rd; edge and channel rusting	1st; heavy chalking	Best; very slight spot rust
	3rd; edge rusting	2nd; darkening	.....
7-B	Best; heavy edge rusting	5th; rust spots	2nd; very slight spot rust
	2nd; edge rusting	3rd; darkening	.....
7-C	2nd; heavy edge rusting	3rd; chalking	3rd; very slight spot rust
	Best; slight edge rusting	4th; darkening	.....
7-D	4th; edge and slight over-all rusting	2nd; hard film	4th; spot rusting
	4th; edge rusting	1st; brightest	.....
7-E	5th; very heavy edge rusting	4th; rust spots	5th; heavy spot rusting
	5th; heavy edge and channel rust	5th; darkening	.....
8-A2	2nd; heavy rust from edge	3rd; some loss of gloss	3rd
	4th; heavy spot rusting	5th; most discolored	.....
8-B	3rd	2nd; fair gloss	Best; slight chalking
	Best; slight edge rusting	4th	.....
8-C	Best; heavy rust from edge	1st; no fading or rusting, gloss	2nd
	3rd; edge and spot rusting	1st; brightest	.....
8-D	4th; heavy rusting	5th; least gloss	4th; one large rust—may be damaged
	2nd; channel rusting	3rd	.....
8-E	5th; one-half rusted off	4th	5th; heavy spot rusting
	5th; rust and flaking	2nd; bright	.....
9-A	3rd; three-fourths gone	2nd; spot rusting	Best; chalking and slight rust
	3rd; heavy edge rust—dirt	4th; spot rusting	.....
9-B	4th; all gone	4th; heavy rust, three-fourths gone	2nd; slight more rusting
	Best; edge and few spots rust	1st; brightest	.....
9-C	2nd; one-half gone	3rd; spot rusting	Worst; most rust spots
	4th; heavy edge and spot rusting	3rd; slight edge rusting	.....
9-D	Best; heavy rusting	1st; rusting	3rd; slight rust, good film
	2nd; edge and spot rusting	2nd	.....
13-A	3rd; almost gone	2nd; spot rusting	3rd; very heavy rust spots
	4th; one-half gone	4th; most darkening	....
13-B	2nd; almost gone	3rd; rust	1st; localized rust
	3rd; heavy rusting	3rd	.....
13-C	Best; heavy edge rust	1st; chalking	2nd; rust spots
	2nd; edge and slight spot rusting	1st; brightest	.....
13-D	4th; gone	4th; heavy spot rusting	4th; failed
	Best; slight edge and spot rusting	2nd	.....
14-A	4th; one-half gone	5th; rusting both coats (apparently damaged)	4th
	4th; one-third gone	3rd	.....
14-B	3rd; heavy rusting	3rd	5th
	3rd; heavy edge rusting	.....	.....
14-C	Best; very slight edge rusting (good panel)	2nd	1st
	Best; very slight edge rusting (good panel)	.....	.....
14-D	2nd; heavy rusting	1st; both coats	3rd
	2nd; heavy edge rusting	.....	.....
14-E	5th; one-half gone	4th; few spots rusting (apparently damaged)	2nd
	5th; one-third gone		.....
15-A	4th; over one-half gone	3rd; faded, slight loss	3rd; very dirty
	4th; edge and channel rust flaking	4th	.....
15-B	2nd; one-fourth gone	1st; faded, most gloss	2nd
	2nd; edge and slight spot rust	1st; brightest	.....
15-C	Best; one-fourth gone	2nd; faded, some gloss	1st; cleanest
	Best; edge and slight spot rust	2nd	.....
15-D	3rd; one-third gone	4th; rusting, least fading	4th; rusting
	3rd; edge and channel rusting slight flakes	3rd	.....

Best Pigment for Vehicle

	Best	Second	Third	Fourth
A	7	5	6	2
	2	1	6	5
B	5	7	2	1
	7	8	6	2
C	14	2	5	1
	5	7	1	2
D	2	5	14	7
	8	5	2	1
E	5	7	1	6
	5	1	6	7

Best pigments average, 2 and 3 Best vehicles, D and C

Best Pigment for Vehicle

	Best	Second	Third	Fourth
	4	5	8	15
	8	14	15	4
	8	14	4	15
	1	5	2	14
	8	4	1	5

Best pigments, 4, 5, 8, 15 Best vehicle, D

Best pigments, 4, 5 and 14

Upper report for each panel refers to single-coated portion and lower report to aluminum top-coated half

St. Louis Club's Paper

Drier standardization has been a subject of interest to the St. Louis Paint and Varnish Production Club since it sent a paper on this topic to the 1930 convention in Toronto. W. Grier Armstrong presented the new paper.

Drier Standardization—"The Aridyne"

Three years ago the St. Louis Paint and Varnish Production Club suggested the adoption of a standard drier solution to which all others might be compared. The unit suggested was the "Aridyne," defined as the "drying power of 0.064 avoirdupois ounce of metallic lead in the form of an oil-soluble lead compound dispersed in a volatile solvent," the amount of metal to be determined by analysis of the finished drier. Thus defined, the aridyne is a measure of drying effect.

The method of applying this standard drier was outlined as follows: "Two equal portions of oil are treated with definitely measured quantities of standard 100 aridyne drier, *i.e.*, 100 x 0.064 or 6.4 ounces of lead per gallon of liquid drier, and the unknown drier respectively, and the two allowed to dry at the same time under as nearly identical conditions as possible. The relative time required to produce the same state of dryness in the two samples is, then a measure of the relative drying power of the unknown in terms of the standard."

An attempt was made to determine the general behavior with linseed oil of a 100 aridyne lead drier, which had been made and analyzed. Because of the low percentage of lead in the drier solution, when enough lead was added to oil to obtain a definite drying time, so much thinner was introduced into the mixture that extreme difficulty was encountered in preventing the oil from running off the panels, and the results were likely to be erroneous. Furthermore, unexpected difficulties arose when it was found that oil with 1.00 percent lead, although no precipitation had taken place in the meantime, after seven months ageing, dried only one-third as fast as a freshly prepared mixture of the same drier and oil. A fresh drier solution checked against the old one indicated that the depreciation of drying power had occurred in the oil-drier solution and not in the drier solution itself. Because of these and other minor difficulties little was actually accomplished toward demonstrating the practicability of a standard unit.

Present Status of the Aridyne

In paper No. 1 three requisites of a standard unit were mentioned:

1. "It must be susceptible to expression in simple mathematical terms."

2. "It must be readily and identically reproducible."

3. "It must be accurately and universally applicable."

To determine exactly what should be done to establish the aridyne as a workable unit, it was considered with respect to the above three requisites with the following results:

1. Simple mathematical expression: That the aridyne meets this qualification may be considered adequately demonstrated by the computations in paper No. 1, where reasons for the choice of the figure 0.064 (ounce of lead) and its ready manipulation are set forth. It requires no further proof.

2. Reproducibility: It has not been proved that all driers fulfilling the requirements expressed in the aridyne definition are equal in drying power. There is much indication that the strength of a drier is not fixed solely by its metallic content, that there really is such a thing as an "availability factor," all of the metal in the drier not being available for drying purposes. The negative component of the metallic compound, its degree of dispersion, and its freedom from drying inhibitors are all probably potent factors in drier action. If necessary, however, most of these difficulties could be surmounted by merely modifying the definition of the aridyne and specifying a specific compound and even a specific solvent. Because of this and because general observations in the commercial field have shown driers meeting the aridyne definition, such as the napthenate driers, to be reasonably, if not absolutely, constant in their action, no effort was made to demonstrate the reproducibility of a standard drier.

3. Universal applicability: That the aridyne qualifies in this respect is somewhat questionable, for if driers are to be rated by comparison with one another, any condition which affects their relative drying is of the utmost importance. This ratio might be altered by at least the four factors of vehicle, temperature, humidity, and drier concentration. That the relative drying power of two driers, when used with different oils or varnishes, varies considerably is such common knowledge that it was not investigated further; in fact, from the first it was never expected that values obtained with linseed oil would hold for varnishes or other oils. Any aridyne values other than those for lead, which was taken as the standard, would necessarily have to be referred to a certain vehicle. The effects of temperature, humidity, and drier concentration are not so well appreciated; consequently, experiments were undertaken to determine the effect of these factors on relative drying times.

Effects of Ageing Upon Oil-Drier Mixtures

Past work, as mentioned in the summary, has already furnished some evidence that oil-drier mixtures lose some of their drying properties if allowed to age several months. In running drying tests, it is quite essential to know all possible variables introduced; therefore, several experiments were conducted with the hope of throwing some light upon this phase of the problem.

Method: One pint samples of analyzed lead, cobalt, and manganese driers of the napthenate type were obtained and placed into well stoppered glass bottles. A gallon of raw linseed oil of the following analysis:

Iodine number	177.9
Saponification number	190
Acid number	3.13
Specific gravity	.931

was filled into an ordinary varnish can. At various intervals over a period of two months 100 cc. samples were withdrawn, drier solutions added, and the mixtures preserved in air-tight glass jars.

Because of the chance that a fixed amount of drier might be used up by some reaction with the oil, or differences in precipitation might be encountered at different concentrations, three different concentrations of lead were used, namely 0.50, 1.00, and 1.50 percent. Since in preliminary tests 1.00 percent lead had produced considerable precipitation in raw linseed oil, and alkali refined oil with the same amount of lead had remained clear, alkali refined oil with the three concentrations of lead mentioned above was also included to ascertain the effect upon drying of this precipitation which usually takes place when lead is added to linseed oil. Manganese and cobalt were run in the same manner and with the same raw linseed oil but at only one concentration, namely 0.10 percent. At the end of the ageing period all the samples of one series were flowed on to glass plates, well washed and rinsed with benzol, placed in nearly a vertical position, and dried simultaneously. During each drying determination the temperature and humidity were read at one to two-hour intervals, the approximate humidity being obtained from a wet and dry bulb apparatus. The dry point was taken as that time at which the finger could be rubbed lightly across the surface of the oil at any point at least one inch from the edge without marring the surface of the film.

Results: By this touch method any difference between the drying of two panels was readily discernible, although the actual dry point expressed in hours was sometimes a matter of personal opinion, because while some of the panels dried uniformly, others dried progressively from top to bottom, and still others dried from bottom to top.

Contrary to preliminary results, no precipitation, except for a barely perceptible cloud on first shaking the samples of 0.50 percent lead in raw oil, occurred in any of the solutions.

FIG. 1.

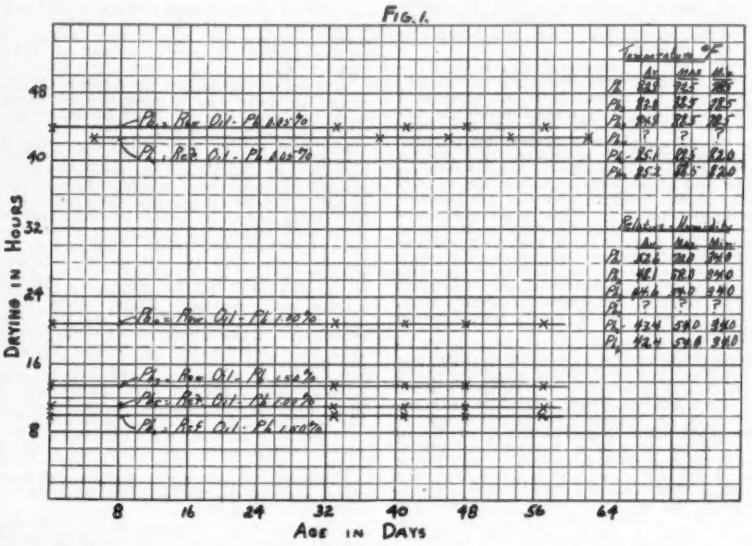
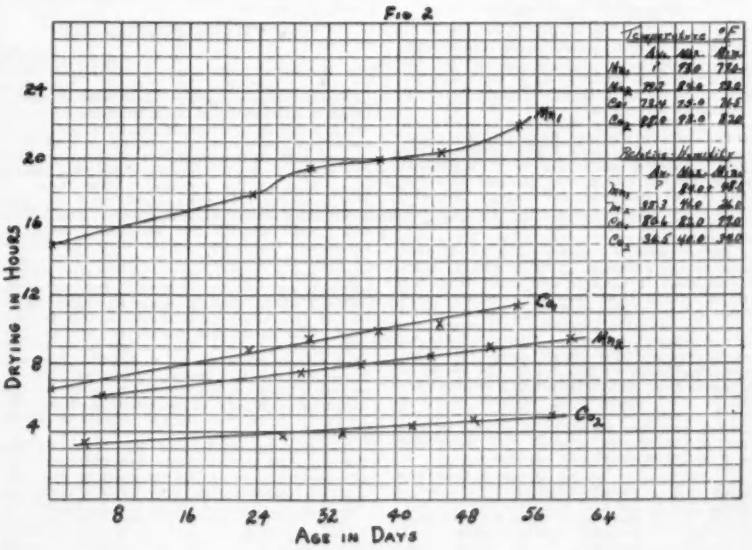


FIG. 2



The results of the tests on the lead are shown in Figure 1, where drying time in hours is plotted against ageing in days. The samples rated zero days old were less than one-half hour old. The average, maximum and minimum temperatures and humidities are also given for each curve. As the curves show, no change in the drying time with age was observed in any of the six different combinations tried.

The results of the tests on manganese and cobalt are shown in Figure 2. The wavy nature of the one manganese curve is undoubtedly due to the rapid and extreme variations in weather which occurred during this run. It was for this reason that both the manganese and cobalt samples were run again under more favorable conditions. All four curves, however, display the same general characteristic, a progressive degradation of drying power with age, amounting to approximately 43 percent in fifty-four days.

Discussion:—As previously mentioned, all past experience warrants the assumption that the drier solutions, especially the type used in these experiments, are fairly constant, leaving the oil-drier mixtures and the oil itself the only variables. A slight cloudiness in the bottom of the oil container might suggest that some material inhibiting drying had gradually precipitated from the oil during the testing period. If this is true, however, it is difficult to explain the lack of change obtained with the lead driers. It is unfortunate that the original intention of using several oils with all three metals was not carried out as this would have provided a check on the part played by the ageing of the oil alone.

Conclusions:—Some investigators (1) using lead and cobalt acetates have found an improvement in drying upon ageing oil-drier samples for a period of one to three months and have explained this phenomenon by the better drier dispersion, indicated by the lack of precipitation, yet diminution in number of colloidal particles in the oil as revealed by the ultramicroscope.

Another investigator (2) using a method similar to that employed here, adding his driers, a lead-manganese resinate melt and cobalt linoleate, at intervals of one month for an extent of ten months, found at the end of this time no change in drying whatsoever.

At present it is impossible to advance any explanation of these various and anomalous results, but it is certain that if consistent results are desired in the testing of driers, it is extremely inadvisable to use mixtures of oils and driers that are more than three or four days old.

Effect of Drier Concentration Upon Relative Drying Times

In Figure 3 are shown the curves of drying time versus concentration for three metals—lead, manganese, and cobalt—and also a lead-cobalt combination with a ratio of ten parts of lead to one part of cobalt. All determinations were made by the methods described in the preceding section. The average, maximum, and minimum temperatures, and humidities are given for each curve. These figures apply to the time elapsed between the flowing out of the oils and the drying of the slowest panel of that particular set.

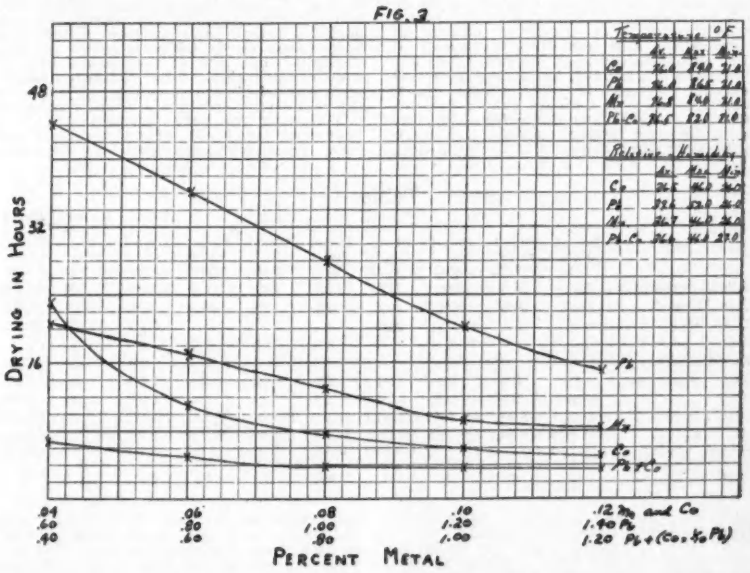
The effect that drier concentration has upon the drying ratio of two different driers may be determined in the following manner:—Suppose enough liquid lead drier of known aridyne strength is added to a gallon of linseed oil to make the metal content 1.40 percent. Again, for purposes of illustration, imagine that the same volume of a liquid cobalt drier when added to a gallon of oil yields a metal content of 0.12 percent. When, in accordance with the method advocated for applying the aridyne standard drier, these two solutions are dried simultaneously, the standard lead drier will have a fifteen-hour drying time and the cobalt drier a five-hour drying time, the times, of course, being read from the curves in Figure 3, that is the cobalt drier is 15/5 or 3 times the aridyne strength of the lead drier.

Now suppose the above test was duplicated but that only half the volume of liquid driers was used, giving a lead concentration of 0.70 percent and a cobalt concentration of 0.06 percent. From the curves the drying times would now be forty and eleven hours, respectively, that is the cobalt drier is now 40/11 or 3.64 times the aridyne strength of the lead drier.

As another very obvious example, cobalt and manganese may be compared. At most concentrations cobalt is superior to manganese; below concentration of 0.045 percent, however unusual, in these particular tests cobalt is inferior to manganese. Another investigator (3) found a similar condition even when comparing two driers that contained the same metal. In comparing a series of cobalt driers prepared from the naphthenic acids and from rosin incorporated in linseed oil varnishes, he obtained the following results: "At concentrations of 0.14 to 0.29 percent of cobalt the varnishes containing the 'Soligen' driers dried in from 1 to 10 percent less time than the resinate driers. Below concentrations of 0.14 percent the reverse was true."

In short, unless halving the amount of drier doubles the drying time, that is, drying time is hyberbolic function of metal content, the ratio of drying times will always be dependent upon the concentrations at which they are taken. The alternate method of comparing amounts of drier which produce the same drying time fails to give consistent results for the same reason when more than one curve is involved. Unfortunately, most of the common drier metals follow a curve of this type for only a limited portion of their useful extent, cobalt approaching it more closely than the others.

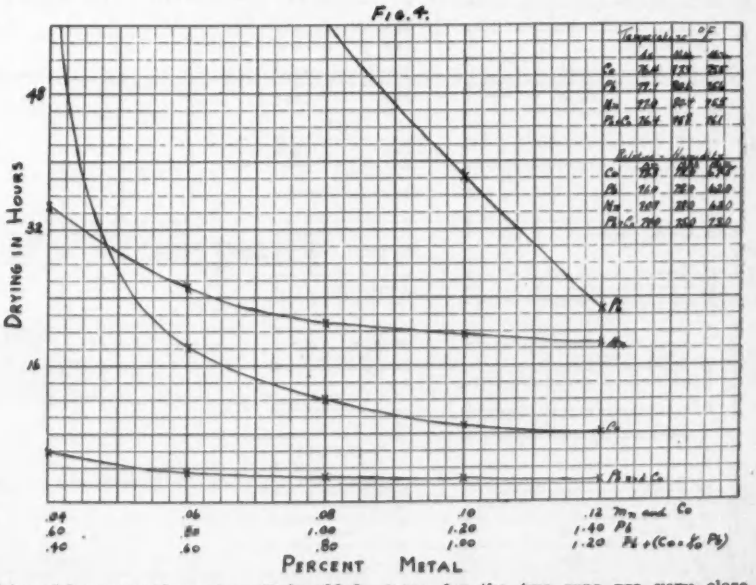
FIG. 3



Combined Effect of Temperature and Humidity Upon Relative Drying Times

Two days after the drying tests were run for the curves in Figure 3 another run was made, using the same samples and same methods, the only difference being the weather conditions. These latter results are shown in Figure 4. An inspection of the temperatures and relative humidities listed on the curve sheets will show that during the first run the humidity was approximately 37 percent for all four curves and that during the second run it was approximately 76 percent for all four curves. The average tempera-

FIG. 4.



tures for the two runs are very close, which might lead one to believe that any differences were caused by humidity alone. A closer inspection, however, will reveal a much greater maximum and minimum deviation from the average

temperatures in the first run than in the second, a circumstance which may have affected the drying time considerably.

Using the same concentrations in each case, it will be found that the ratio of drying times between two driers obtained from the curves in Figure 3 usually varies considerably from the ratio obtained from the curves in Figure 4. For example, comparing lead at 1.20 percent with cobalt at 0.10 percent, we obtain in the first instance a value of 20/6 or 3.33, in the second we obtain the value 38/9 or 4.22. Further, as was expected, the combination drier is practically unaffected by the change in weather, while the single metal driers are quite adversely affected. This, of course, changes their drying relations. The relations between all four driers may be deduced if desired, but these few illustrations are sufficient to prove the point that relative drying ratios are dependent upon the weather conditions at which the tests are run.

General Conclusions

The foregoing facts clearly show that the relative strength of two liquid driers is a function of at least the vehicle, drier concentration and combined effects of temperature and humidity. To speak of any drier, except, of course, the one chosen as a standard, as having a certain aridyne strength is meaningless unless conditioned by statements concerning the above factors. Thus the aridyne system loses its chief virtue, namely the possibility of rating driers merely by testing them side by side with some other drier, regardless of external conditions.

A more complete study of even the few phases of the drier problem touched on here is much to be desired. A quantitative study of the effects of temperature and humidity would be highly interesting and valuable. Such work, however, is impossible without equipment, such as controlled drying conditions and "Dry-O-Graphs" accommodating a number of panels. The type of work is not readily adapted to cooperative research as even if the equipment were available, it would have to be stationed in one laboratory and a distribution of the work would be difficult.

Much work remains to be accomplished and merely because of the aridyne, which looked so promising a few years ago, now appears to be a rather cumbersome tool, it cannot be said that a clearer and more comprehensive view of the drier problem has not been obtained. All is not lost because a hypothesis happens to explode during its investigation. The fragments of knowledge always remain.

Acknowledgement is made to Nuodex Products, Inc., for their courtesy and generosity in supplying the analyzed driers used throughout these experiments.

Literature Cited

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(2) Felix Wilborn-Farben Ztg. 33,864 (1928).
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Toronto Club's Paper

H. M. Sinclair presented the following paper for the Toronto club:—

Effect of Chinawood and Fish Oils in Outside Paints

It was decided late in 1931 to attempt an evaluation of increasing amounts of Chinawood and fish oils with linseed in white paints. Our program was set up to keep as many factors constant as was possible in order to present a picture of the advantages or disadvantages found in these oils. We made no attempt to formulate an ideal paint using these oils, our idea being to add, if possible, some knowledge as to how they behave to the current literature on the subject.

The chinawood oil used in our work was of the ordinary commercial grade. The fish oil was a refined pilchard oil. Each of these oils were heat treated before being blended with linseed, the blending being carried out with practically cold oil. The chinawood oil was taken up to 540 degree F. and immediately cooled; the fish oil was taken to 550 degree F. and held for thirty minutes, then cooled. The body taken on by the chinawood oil was negligible, but that of the cooked fish oil was considerable. The ultimate blends with linseed oil are shown in table 1 with the resulting viscosities and color of each.

Following the 1932 convention, it was suggested by A. E. Stauderman, of the New York club, that we include some tests with blown fish oil blended, with chinawood and linseed oils. We obtained a light blown pilchard oil for this purpose containing less than 1 percent volatile matter with a Gardner-Holdt viscosity "A." Data on these blends are also included in table 1.

The pigment combinations shown in table 2 were each ground in the linseed, chinawood and fish oil blends so that the pigment content of the resulting paints was 29 to 31 percent of the total solids content. In the case of the blown fish oil with chinawood oil blends, only "B" pigment combination was used as there was a lack of time to complete tests on these blends. No attempt was made to check the wetting properties of the various oil blends. All grinds were made in small porcelain crocks using stone pebbles. After forty-eight hours all grinds were satisfactory.

Table 1

	Boiled plus raw	Blend No. 1 C.W.O.	Blend No. 2 C.W.O.	Blend No. 3 C.W.O.	Blend No. 1 fish	Blend No. 2 fish	Blend No. 3 fish	Blend No. 1 C.W.O. plus bl. fish	Blend No. 2 C.W.O. plus bl. fish	Blend No. 3 C.W.O. plus bl. fish
Boiled linseed.....	25%	25%	25%	25%	25%	25%	25%	23.8%	23.8%	23.8%
Raw linseed.....	65%	60%	50%	40%	60%	50%	40%	57%	47.5%	38%
C. W. O.....	....	5%	15%	25%	....	....	....	4.7%	14.8%	23.7%
Refined pilchard...	....	....	....	....	5%	15%	25%	....	....	....
Blown pilchard....	....	....	....	....	....	....	....	5%	15%	25%
Gum turpentine...	8%	8%	8%	8%	8%	8%	8%	7.6%	7.6%	7.6%
Drier	2%	2%	2%	2%	2%	2%	2%	1.9%	1.9%	1.9%
Lead nuodex.....	(45.9%)	(45.9%)	(45.9%)	(45.9%)	(33.2%)	(33.2%)	(33.2%)	(45.0%)	(45.9%)	(45.9%)
Mn. nuodex.....	(43.3%)	(43.3%)	(43.3%)	(43.3%)	(53.5%)	(53.5%)	(53.5%)	(43.3%)	(43.3%)	(43.3%)
Cobalt nuodex.....	(10.8%)	(10.8%)	(10.8%)	(10.8%)	(13.3%)	(13.3%)	(13.3%)	(10.8%)	(10.8%)	(10.8%)
Viscosity G. H....	A	A	F	G	M	O	P	A	E	F
Color G. H.....	4	4	4	4	4+	4+	4+	4—	4—	4—

Table 2

Pigment Combinations

	A	B	D	E	F
Basic carbonate white lead..	60	55	..	..	..
Zinc oxide (lead free).....	40	30	30	..	..
Lithopone 30%.....	..	..	55	40	..
Leaded zinc 35%.....	..	..	..	45	45
Titanox B.....	..	..	..	..	40
Silica	..	7.5	7.5	7.5	7.5
Asbestine	..	7.5	7.5	7.5	7.5

The blends of oil and the resulting paints were stored at room temperature. After sixteen months the only oil blend that showed signs of increasing viscosity was the No. 3 fish oil blend which had increased from "P" to "R". None of the paints had increased in viscosity after fourteen months' storage. Neither the straight linseed oil nor the fish oil blends showed a tendency to skin in the can, but in the China wood oil blends there was an increased skinning with increased China wood oil content. This feature was also noted in the paints. Due to the variation in the body of the paints there was practically no check on the reputed non-settling properties of fish oil paints. The straight linseed blend, No. 1 chinawood oil blend and No. 1 chinawood oil with blown fish oil blend all have the same viscosity. A slight improvement was noted in non-settling where the blown fish oil was present.

Table No. 3 shows the results we have so far obtained from the tests on the various paints. Final data on exposures will possibly not be available before the summer of 1934. So far we can only record the tendencies shown by slightly over two months' exposure. All panels exposed were of southern pine coated on back and edges with a good grade of outside paint reinforced with 10 percent aluminum powder. The usual procedure for new panels was followed in brushing the paints, that is, first coat reduced 100 percent with clear vehicle; second coat reduced 10 percent with turpentine, and the third coat applied straight. The tests under observation were brushing, flow, initial gloss, loss of gloss, discoloration and yellowing.

The arrows in table 3 indicate increase or decrease in the particular test as one goes from No. 1 C. W.O. blend to No. 2 C.W.O. blend, or from No. 1 fish oil blend to No. 3 fish oil blend, etc. For example, there is an increase in initial gloss as one goes from No. 1 C.W.O. to No. 3 C.W.O. in A, and a decrease in initial gloss as one goes from No. 1 fish oil to No. 3 fish oil blend. Where arrows point in both directions the results were approximately the same for those blends covered thereby, i. e., the yellowing of the C.W.O. blends with A and B pigment combination in test No. 6.

Conclusions

In conclusion we mention a recent publication on fish oil by Brocklesby and Denstedt of the Fisheries Experimental Station at Prince Rupert, British Columbia. Their work has in some respects duplicated our own and agree with our results in four points.

1. The addition of large percentages of fish oil to linseed produce more elastic films, slightly lower at the tack free stage than straight linseed oil paints.

2. Blooming in quite pronounced in paints containing fish oils, said to be due to minute crystals of solid free fatty acids.

3. Lead pigments have a marked accelerating action on the drying of fish oils. Basic lead carbonate shows the greatest accelerating action.

4. The yellowing of white pigments is especially marked where both chinawood oil and fish oil are present. This condition can be greatly reduced by using a more highly polymerized fish oil.

In film characteristics, the heat bodied fish oil used produced an increase in hardness and toughness with linseed oil. The chinawood oil blends with and without blown fish oil produced films of a certain toughness but in all cases were fairly soft. Chinawood oil blends produced paints somewhat shorter than straight linseed oil.

In general the paints containing chinawood oil have the highest initial gloss with the least loss of gloss on exposure, while the paints containing fish oils have the lowest initial gloss with the greater loss of gloss on exposure. The paints containing fish oils have considerably better color retention than straight linseed oil paints or those containing chinawood oil. Yellowing tests on cevered metal panels show a quite decided advantage where the fish oil blends are used. Chinawood oil blends were slightly inferior to straight linseed oil in this respect. Chinawood oil blends with blown fish oil produced paints with excellent initial gloss with only a very slight tendency toward early blooming. They show serious discoloration on exposure and show bad yellowing properties.

Regarding exposure data. Duplicate panels were prepared, one set of which is on exposure in Florida, while the other set is exposed in Toronto. It is proposed to turn over to the federation more complete testing data on these at a later date.

Without considering final exposure data, four points so far have been fairly well established:—

(a) The higher initial gloss and superior gloss retention of chinawood oil blends, refer to table 1, columns 3, 4 and 5.

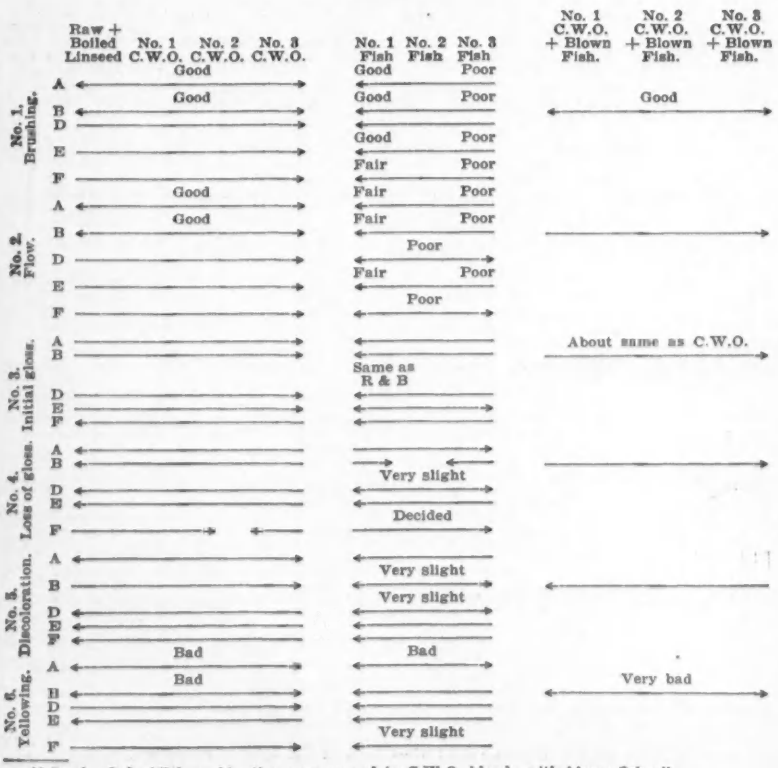
(b) The lack of tendency to discolor in the fish oil blends, refer to table 1, columns 6, 7 and 8. Also table 3, test 5.

(c) The early blooming of paints containing fish oil with linseed, refer to table 3, test 4.

(d) The superior non-yellowing properties of highly polymerized fish oils, refer to table 3, test 6.

In closing we wish to express our appreciation to Bruce Ross, Ltd., and to the St. Lawrence Trading Company, Toronto, who kindly supplied the necessary working samples.

Table 3



N.B. 1. Only "B" combination was ground in C.W.O. blends with blown fish oil.
2. Brief descriptions have been put in where results were considered outstanding.

Saturday, October 28

Fifth Session, Saturday Forenoon

This extra session was an innovation, as the federation conventions heretofore have been two-day affairs. It was felt, however, that more time could be utilized in a general round-table talk on any matter which a member might care to bring up. Mr. Atwood, in his capacity as chairman of the plant manager's committee, presided at this gathering, after the program chairman, Mr. McMenamin, had concluded with his part of the morning with the presentation of the final technical paper, that of the Philadelphia Club.

Philadelphia Club's Report

The position and importance of the technical man in the paint and varnish industry was the subject discussed by the Philadelphia club in its convention paper which follows:—

The Technician in the Paint and Varnish Industry

For the past few years the Philadelphia Paint and Varnish Production Club has investigated subjects of a purely scientific nature and we hope that the reports of some of this work have resulted in distinct advances to the sum total of technical knowledge of the chemistry of paints and varnishes. Some of us have felt that the club was undertaking work which involved problems of a technical nature beyond our power of true solution without considerable laboratory investigation; for work of a cooperative nature it was felt it would be better to study some subject easier of solution for a cooperative group. During several discussions in an attempt to pick out a suitable subject it became apparent that the type of work that we were called upon to do in our respective companies varied to a considerable degree. Although we are considered technical men in our respective companies there does not seem to be any common ground in the scope of our activities. As a result of this realization it was decided to digress from a purely scientific or practical paint or varnish subject, to make a study of the kind of work we should be doing for the best interest of our company.

It can readily be understood that the duties and responsibilities of the technical men of the paint and varnish factory will vary a great deal when one realizes that this industry is composed of numerous independent companies, both large and small. Some of these companies are very old in the matter of years and retain a great deal of their past tradition, while others have been founded since the introduction of nitrocelluiose lacquer. Some of the companies have realized that the paint industry has changed from one of art to one of science, but there are also some companies who employ a chemist simply because it is the thing to do from a production viewpoint and still consider the making of paints and varnishes pretty much of a secret process.

The pioneer scientific work of Sabin and Thompson at the National Lead Company; the work of Ladd and his associate, Holley, during the Dakota pure paint law turmoil; and the present outstanding work of Dr. H. A. Gardner, director of the Gregg Memorial Institute of Paint and Varnish Research, have made practically every paint and varnish executive realize that if his company is to keep up with the changing trend it is necessary to employ technical people in his plant, but the exact duties of these technical people are not clearly defined. Practical men are very often in control of production and they sometimes think that the technical men are little better than worthless in the manufacture of paints and varnishes.

During the past few years there have been remarkable development made in the organic protective coating industry. Paint and varnish making can no longer be classed as a secret art. It is a highly chemical industry which not only requires the services of analytical chemists, but of highly trained physical and organic chemists and chemical engineers. Successful production cannot be maintained by rule of thumb, but in order to meet the demands that are required of the products it is necessary to have a strict scientific control.

The Technician's Services

We are not trying to pass judgment on the industry, nor are we trying in any way to discredit the present executive policy of any company, but we as technical men have tried to take stock of what we are doing and by comparing the work that technical men are doing in the different companies we are trying to outline the most desirable position for the technical men in the personnel flow sheet of the company so that they may do the most good for their company. The technical man should not be called upon to operate a truck nor to perform the duties of a shipping clerk, nor should his technical work and reports be totally disregarded by the production departments. We all agree that in none of these cases is the technical man doing a job to the best interest of his company, yet in our discussion on this subject we have found that these cases actually exist. In order to determine the exact functions and responsibilities of the technical men in the different companies, we sent a questionnaire to a representative group of these men in the industry.

In this questionnaire we tried to determine the duties and responsibilities of the technical man, his relation to the production department, and his authority in relation to executives of the company.

We did not think it was advisable or necessary to send a questionnaire to every paint company, but we tried to obtain information from companies which would give us a cross section of the industry. We have received replies from a company which normally employs six men and from a company which normally employs over a thousand and, of course, in between these two extremes we have replies from every class. These companies, located in every paint manufacturing center, comprise specialty companies which manufacture linoleum or lacquer exclusively, as well as companies which manufacture every type of coating and a great many of their raw materials.

The term "technical head" which appeared in our questionnaire and the term "technical man" in this paper are gen-

eral terms which we are using to designate the person in charge of the scientific work in our paint and varnish factory. This scientific work having particularly to do with formulating of the products that the company sells.

In analyzing the replies to our questionnaire we observed that there was a great variation in the titles of men occupying similar positions. For example, in answer to our question number 4—"What is the title of the technical head of your company?"—we discovered that this title ranged from vice-president, superintendent, technical director, to chemist. We are also aware that in some companies one man may have the duties covered by several positions in our questionnaire. For example, the production executive may also be the technical head in the smaller companies. We have tried to keep that under consideration and have tried to outline the duties of the technical head regardless of his combination with other positions in the company. To get an idea of the variation in answers we are submitting the answers received from two companies; one is apparently small, as indicated by the twenty men normally employed; while the other is comparatively large, as indicated by the four hundred men employed.

Questions and Answers

1. What is the number of men normally employed with the exception of sales?
Ans. 1. Twenty.
Ans. 2. Four hundred.

2. What is the title of the executive in charge of production?
Ans. 1. Factory superintendent.
Ans. 2. Factory manager.

3. What official relation has he to the president of your company?
Ans. 1. . . .
Ans. 2. He reports to the general manager, who reports to the president.

4. What is the title of the technical head of your company?
Ans. 1. Technical director.
Ans. 2. Director of research.

5. Does he report to:—Executive in charge of production (Question No. 2)? Factory superintendent? Sales manager?
Ans. 1. Direct to president of company.
Ans. 2. He reports to the general manager.

6. If he does not report to the factory superintendent what is his official relation to him?
Ans. 1. Factory superintendent reports through technical director to president.
Ans. 2. Co-ordinate.

7. Is the technical head directly responsible for getting out any production?
Ans. 1. Indirectly.
Ans. 2. No.

8. If so, in what manner?
Ans. 1. Insofar as he is directly responsible for both factory and technical departments.
Ans. . . . .

9. Who is responsible for formulating new products?
Ans. 1. Technical department.
Ans. 2. Director of research.

10. Who is responsible for modification of present products?
Ans. 1. Technical department.
Ans. 2. Director of research.

11. Who gives technical information on your products to the sales department?
Ans. 1. Technical director.
Ans. 2. Director of research and heads of formulating divisions.

12. Who investigates complaints reported by sales department?
Ans. 1. Technical department.
Ans. 2. Heads of the formulating divisions or the men who test factory production known as "Testers."

13. Do you have a development department which is distinct from the factory control laboratory?
Ans. 1. Usually, but not at present.
Ans. 2. Yes.

14. To whom does the control chemist report?
Technical head?
Factory superintendent?
Ans. 1. To factory superintendent and in cases of no agreement the technical director's word is final.
Ans. 2. Factory superintendent.

15. Who tests samples of new raw materials?
Ans. 1. . . .
Ans. 2. Raw material chemist.

16. Who has final say in passing batches—of industrial goods? of shelf goods?
Ans. 1. Technical department in both cases.
Ans. 2. Heads of formulating divisions on industrial goods and director of research on shelf goods.

17. Who is responsible for the successful manufacture of the first batch of a new product?
Ans. 1. Technical department.
Ans. 2. Director of research on shelf goods and heads of formulating divisions on industrial goods.

18. Who approves succeeding batches?
Ans. 1. Factory superintendent through control laboratory.
Ans. 2. Testers maintained for that purpose.

19. Does the production department have any direct connection with sales?
Ans. 1. Yes.
Ans. 2. No.

20. If so, how?
Ans. 1. In reference to rush orders.
Ans. 2. . . .

21. Does the development department have any direct connection with sales?
Ans. 1. Only through technical director.
Ans. 2. Yes.

22. If so, how?
Ans. 1. . . .
Ans. 2. By frequent conferences with heads of sales divisions.

23. Who decides if an industrial development shall be made?
President?
Sales manager?
Technical head?
Factory superintendent?
Control chemist?
Ans. 1. President.
Ans. 2. Technical head.

24. Who has final approval of new industrial developments, including cost?
Ans. 1. President with technical director.
Ans. 2. Heads of formulating departments.

25. Who decides if a new shelf goods product shall be made?
Ans. 1. President with technical department and sales.
Ans. 2. General manager.

26. Who has final approval of new shelf goods products including cost?
Ans. 1. President with technical director.
Ans. 2. General manager and director of research.

27 Who determines the cost of a new product?
Ans. 1. Cost department under technical director.
Ans. 2. Cost department.

28. Who is responsible for complaints on sales?
Ans. 1. Technical department.
Ans. 2. Head tester.

Divisions in Operation

There was a vast difference in opinion in some cases; for example, we received the following communication together with our questionnaire from one of the large companies:

"It would be rather difficult to draw up a chart of our organization as it actually operates. Some years ago flow sheets were made up, but have not been followed."

"The lacquer, insecticide, pigment and chemical operations of our organization have always been run differently from the Paint department and still are. So far as the paint end of the business is concerned, and I imagine that is what you are working on, it has always been my idea to have a technical side and an operating side, each supervised by a different man, reporting to the superintendent.

"The technical side of our paint division is divided into two branches, one which does the formulating and the other which handles the testing. The formulator must have his formulation approved by the tester, after which it goes to the operating department, who must manufacture the goods so they will pass the tester; neither the formulator nor the production man being able to override the tester. It often happens that the operating end are unable to produce goods on the formula given them that will successfully pass the tester and the superintendent then orders the formulator to go into the department and make a batch that will pass."

In general there was enough similarity in the answers so that it was possible to draw a general conclusion.

Summary of Answers

Following are the answers of each question based on a summary of all questionnaires:

1. What is the number of men normally employed with the exception of sales?
Ans. . . .

2. What is the title of the executive in charge of production?
Ans. Superintendent.

3. What official relation has he to the president of your company?
Ans. Reports to president or general manager.

4. What is the title of the technical head of your company?
Ans. Technical director.

5. Does he report to:
Executive in charge of production (Question No. 2)?
Factory superintendent?
Sales manager?
President?
Ans. Executive in charge of production or president.

6. If he does not report to the factory superintendent what is his official relation to him?
Ans. Same man or co-operative (equal).

7. Is the technical head directly responsible for getting out any production?
Ans. No.

8. If so, in what manner?
Ans. See No. 6.

9. Who is responsible for formulating new products?
Ans. Technical head.

10. Who is responsible for modification of present products?
Ans. Technical head.

11. Who gives technical information on your products to the sales department?
Ans. Technical head.

12. Who investigates complaints reported by sales department?
Ans. Technical head.

13. Do you have a development department which is distinct from the factory control laboratory?
Ans. Yes.

14. To whom does the control chemist report?
Technical head?
Factory superintendent?
Ans. Technical head.

15. Who tests samples of new raw materials?
Ans. Control chemist.

16. Who has final say in passing batches—of industrial goods? of shelf goods?
Ans. Technical head.

17. Who is responsible for the successful manufacture of the first batch of a new product?
Ans. Development laboratory (technical head).

18. Who approves succeeding batches?
Ans. Control laboratory.

19. Does the production department have any direct connection with sales?
A. Yes.

20. If so, how?
Ans. Conferences — answers technical letters—service.

21. Does the development department have any direct connection with sales?
Ans. Yes.

22. If so, how?
Ans. Conferences — demonstrations — sales service.

23. Who decides if an industrial development shall be made?
President?
Sales manager?
Technical head?
Factory superintendent?
Control chemist?
Ans. Combined opinions of president, sales manager and technical head.

24. Who has final approval of new industrial developments including cost?
Ans. President. Sales manager (should have).

25. Who decides if a new shelf goods product shall be made?
Ans. President and technical head.

26. Who has final approval of new shelf goods products including cost?
Ans. Technical head.

27. Who determines the cost of a new product?
Ans. Factory cost department.

28. Who is responsible for complaints on sales?
Ans. Technical head.

We can draw the following conclusions as to just what position the technical head should occupy in the paint factory:

1. He should report directly to the president or his executive representative such as the vice-president or general manager.

2. He shall occupy a position at least equal in importance to the factory superintendent or he should be superior to the factory superintendent.

3. His opinion with regard to the new products shall have equal importance to that of the sales manager.

Duties

1. Formulating new products.
2. Modification of present products.
3. Handle technical information to sales force.
4. Charge of control laboratory.
5. Responsible for the manufacture of the first factory batch of a new product.
6. Have the final approval of new shelf goods.
7. Have charge of technical sales service.

Not His Duties

1. Getting out production products.
2. Checking shipments.

Responsibilities

He should be responsible for:

1. Complaints reported by sales.
2. Testing of raw materials.
3. Passing of production batches of both industrial and shelf goods.
4. Complaints from customers that goods are not uniform.
5. Decision in conjunction with sales manager for making new industrial products.

Based on the above statements the technical head is responsible for the success of the company in practically every step with the exception of getting out production. This at first thought may seem to be a large order, but the decision is based entirely upon the answers to the questionnaire which indicate that he is at present doing most of this work.

Half a dozen questions with regard to the industry code were presented in writing and were to be forwarded to Mr. Trigg for answer. The meeting was adjourned at 12:30 p. m.

Federation's Annual Banquet

Technical men work hard and they also play hard. So announced Eugene E. Sparrow before the annual banquet of the Federation of Paint and Varnish Production Clubs in the ballroom of the Edgewater Beach Hotel, Chicago, October 31. According to James E. Heckel's count, 261 persons sat down to dine, sing, and enjoy an exceptional band of entertainers who offered everything from trick golf shots to snake-hip dancing.

James F. Kurfees, president of the American Paint and Varnish Manufacturers Association; Samuel R. Matlack, president of the National Paint, Oil and Varnish Association; Thomas J. McFadden, general manager of the associations; Fred Seder, president of the Chicago Paint and Varnish Production Club; and Fred Wright, of the local host committee, were guests.

After the coffee had been served, Mr. Sparrow introduced the guests and in his capacity as retiring president, urged support for his successors in the same measure as it had been given to him. Personally, he said, this was not his swansong as he meant to work harder than ever for the federation. F. C. Atwood, newly elected president, was introduced and remarked that under the new deal, the technical men would have to wait for the other branches of the industry to catch up to the development that have been made since 1914, when real interest in technical research first developed. He asked for full support and co-operation in the new tasks which would be given to the members of the federation under the reorganized paint manufacturing industry.

The Chicago host committee, in addition to Mr. Wright, was composed of P. B. Crandall, L. E. Fishleigh, Milton K. Pine and H. A. Paulsen.

American Paint Journal Award

"A Study of the Effects of Addition Agents on Floating of Pigments in Paints and Enamels," presented by Edwin Edelstein for the Cleveland Paint and Varnish Production Club, was unanimously chosen by the award committee, for the $100 *American Paint Journal* award for the best federation paper of the year. Everett W. Boughton was chairman of the committee, on which Dr. H. A. Gardner, C. D. Holley, G. W. Thompson, and P. H. Walker also served.

Presentation of the award was made at the annual banquet of the federation.

Murphy Varnish Company

Newark Chicago San Francisco

The Second Paint Industries Show

The Paint Industries Show, inaugurate in 1932 at the Washington convention, seems now to be a fixture in connection with the annual meetings of the Federation of Paint and Varnish Production Clubs. The second show was held this year during the three days of the convention sessions, and, except for the evening of the banquet, it was open and crowded until nine or ten o'clock.

There were thirty-one exhibitors, compared with seventeen last year, this number being composed of eleven renewals and twenty firms showing for the first time. Two months ago, according to Charles W. Clark, of E. I. du Pont de Nemours & Co., chairman of the committee in charge, all of the available space was sold out, and already there are definite commitments for the 1934 show.

Charles W. Clark
Chairman on Paint Show Arrangements

Those who worked with Mr. Clark were Edward F. Maloney, Chicago, who has been named chairman of the committee for 1934; Roy B. Anderson, A. W. Cooke, J. L. Crowley, C. W. Fawkes, M. W. Frishkorn, William L. Hale, George B. Heckel, C. A. Holkesvia, H. G. Kicker, C. A. Knauss, and J. F. McMenamin.

Purpose of Show

The official explanation of the purpose of the show is:—

Federation members are continually in contact with the suppliers to the paint industry for improved materials. Many contacts are made by reading the trade and technical journals. At the respective club meetings much information is broadcast through the courtesy of a few suppliers who present valuable papers on pertinent subjects. Between the fields of trade journals and the club meetings there is a third field for which need has been felt. Thus the Paint Show.

The exhibits were attractively arranged around the walls of the East Lounge of the Edgewater Beach Hotel, in which the sessions of the Federation met. A brief sketch of the various presentations is given herewith:—

Booth 1

Kentucky Color & Chemical Company

This chemical dry color producer, with headquarters in Louisville, had the space immediately on the right on entering and had arranged an attractive revolving electrical display, showing cards on which slogans and sales points concerning its Shawnee colors were illustrated. Carl A. Henlein and W. R. Fritsch explained the company's latest paint pigments, shown in dry form and as applied on panels. A new permanent blue, lacquer maroons, flat varnish and flat lacquer made with aluminum stearate were included.

Booth 2

R. B. H. Lacquer Base Company

This, seemingly, was a far cry from a paint show exhibit, as it caught the eye at the entrance with golfballs, pencils, textile products, pressed woods, dominoes, and imitation reptile skins, but a second glance showed that every item on display had been finished with commercial lacquers pigmented with R. B. H. pigment pastes. Henry J. Hemingway, president, came on from Bound Brook, N. J., for the show, and the company's Western representative, O. L. Bluthardt, was on hand to give technical information about uses and processes.

Booth 3

Standard Oil Company of Indiana

The intricacies of a modern fractionating still as used in the petroleum industry were revealed in the display of a glass apparatus, which, to a lay observer, would certainly appear to have been designed by Rube Goldberg in his most involved frame of mind. The apparatus was illustrating the actual method of separating crude petrolum into lubricating oil, kerosene, and gasoline. The purpose of the exhibit here was to show the method of producing the company's lacquer diluents and other thinners. In charge were E. E. Follin and S. F. Martin.

Booth 4

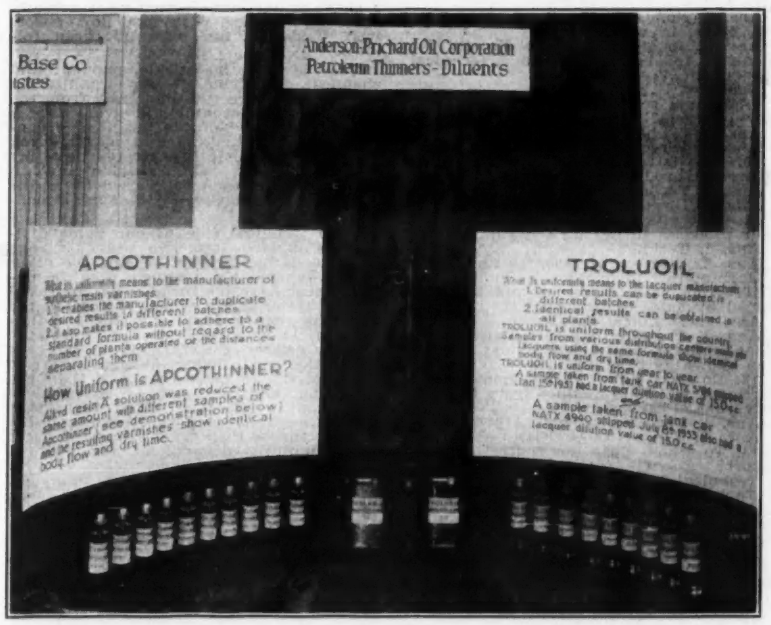
Anderson-Prichard Oil Corporation

Uniformity as an essential factor in petroleum thinners and diluents was the keynote of this display. C. H. Dresser, director of industrial naphtha sales; Dr. J. K. Stewart, head of the industrial naphtha research laboratories; and D. D. Rubek, of the Chicago laboratories, were active in contacting visitors. A large placard proclaimed the fact that a sample of Troluoil taken from a tankcar January 15, 1931, had exactly the same lacquer dilution value as a sample taken from another tankcar two and a half years later. Another placard called attention to ten samples of Apcothinner from plants in ten different cities, the uniformity of each of which had enabled all plants to adhere to a standard formula in the manufacture of synthetic resins.

Booth 5

J. Meyer & Sons

Simplicity and clarity, or visibility, were dominant in the exhibition of the driers of this long-established firm, with Fred L. Meyer and Linford Graham on hand to greet visitors. A huge plate-glass case contained three rows of smaller glass cases, each containing a sample of the company's various products. A mirror background further added to the general effect and attractiveness. Leaflets were distributed detailing the lines of driers and varnish gums.



Booth 6

Wilson & Bennett Manufacturing Company

Art in industry was exemplified in the steel containers shown by this company, which several years ago installed its own design department and lithographing plant for the benefit of clients. These auxiliary service departments are now as fully equipped as any independent establishments in the country. One container for a shampoo product was labelled in a modern design in brown, silver, and lavender, which was as effective as an illustration in an art magazine. Benetco swivel-spout Por-Pails were being introduced at the exhibit. Special emphasis was given to pails for paints and varnishes. A representation from the home office in Chicago always was on hand, including J. C. Bennett, sales manager; G. D. Zuck, advertising manager; Harry LePan, assistant sales manager; and Henry Frazin, district sales manager.

Booth 7

Resinous Products & Chemical Company, Inc.

At the first Paint Industries Show in 1932, this company had a comprehensive exhibit, not only of resins and other products, but of their application in paints, varnishes and lacquers, coated fabrics, molded and laminated objects, and other products. The exhibit this year was somewhat simpler, but distribution was made of a pamphlet showing research progress and the results of experience gained in the technical sales department. Among the products displayed in an effective booth and discussed in the brochure were Amberol, phthalic anhydride-glycerin type resins, resins and plasticizers for lacquers, synthetic resins, urea-formaldehyde resins, and Plexigum. Cl. L. Cane and George T. Sohl were in charge.

Booth 8

Texas Mining & Smelting Company

Antimony sulphide ore from the Catorce district, San Luis Potosi, Mexico, and beside it shining examples of the finished antimony metal formed the central piece of this exhibit, which was in charge of H. S. Riker. There were also displays of Green Star, White Star and Red Star marks of Timonox, and demonstrations of their application as pigment bases in paints, varnishes, and lacquers. Photographs of production localities and plants added to the pictorial value of the display.

Booth 9

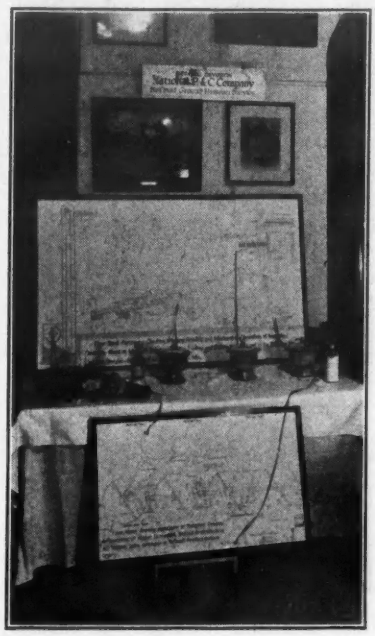
Carborundum Company

Those distinctive, large wheels of Aloxite again stood out clear across the room and attracted visitors who remembered last year's display of millstones and grinding-wheels. The company also showed Carbofax brand refractory domes and refractory bricks. An illustration on display showed a roller mill with Aloxite rolls on a steel shaft. R. J. Penny and R. A. Kindig were in attendance.

Booth 10

DeLore Division, National Pigments & Chemical Company

A flowsheet portraying crushing, washing, grinding, and mechanical elimination of impurities commonly found in Missouri barytes ore, also the floating and bolting method used in the DeLore Plant, formed the background



of this exhibit, of which A. E. Stocking (the 21,480,142d visitor to the Century of Progress exposition) was in charge. The DeLore plant is at St. Louis. Oil painting and sketches by O. E. Berninghaus, of the country in Washington county, Missouri, where the barytes ore is found, were exhibited. Booklets about the deposits were distributed. C. P. DeLore was present to greet visitors.

Booth 11

Advance Solvents & Chemical Corporation

A large black and white poster, showing the spirit of progress flying over an industrial community, attracted the eye to this exhibit. A slogan, "Soligen Driers Set the Pace," also set the keynote for the display, which consisted of styrol and vinyl resins and various esters of cellulose. C. A. Lechner, Chicago representative; A. B. Mullaly, and C. A. Klebsattel, technical representative, were on hand.

Booth 12

Joseph A. McNulty

Both Joseph A. McNulty and Frank B. McNulty were on from New York to preside over their display of fine earth colors prepared especially for paint and varnish manufacturing needs. They were featuring pure Indian and pure Turkey reds, with a variety of specimens of umbers, siennas, ochers, chromium oxides, and other colors on view. The application of these pigments was shown on several panels. The company's vivid "ink spot" design with "Red Oxide" in white was the single but effective decorative feature of the booth.

Booth 13

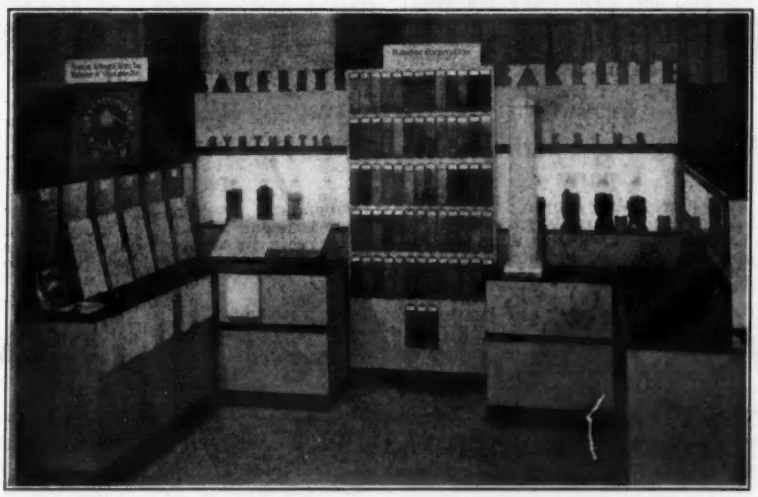
Binney & Smith Company

Included in the specimens of blacks and colors shown by this New York concern were Koblak, Royal Spectra, Super Spectra, Superba, and Ivo No. 1 blacks, and Mapico colors—red, Indian red, yellow, and brown. The representatives were emphasizing the qualities of the new Koblak, which is a new black lacquer base, fast to light and non-bleeding. J. T. Kealy, Norman Lee Smith, Dr. Frederick H. Lane, and Robert Cary were in attendance.

Booth 14

Spencer Kellogg & Sons, Inc.

The human touch was apparent in this booth, with a vivid Sou'wester and peajacket bringing home the use of vegetable oils in clothing; a fascinating little display of the various steps in the production of linoleum showing the far-flung sources of the kitchen covering; and an old Chinese log or wedge press stressing the progress that has been made in the evolution of industry. Special refined linseed oils were featured in the exhibit, which also had on display flaxseed, raw linseed oil, linseed cake and meal, soybean oil, soybean cake and meal, castor



beans, castor oil, tung nuts, tung oil, and a number of other commodities. The exhibit was in charge of E. H. Valance, manager of the special oils department, assisted by H. L. Bayer, of the Chicago office.

Booth 15

Commercial Solvents Corporation

An enormous book display, the pages of which were electrically turned, proclaimed to the attending world that "Nothing Can Take the Place of Lacquer," and gave twelve reasons for lacquer's superiority. This company, producing butanol, butyl acetate, ethyl alcohol, methanol, and other "chemicals from corn," was represented by Clyde M. Phillips and Dr. O. R. Brunkow. Distribution was made at the booth of a substantial brochure giving specifications and properties of the several products.

Booths 16-18

Bakelite Corporation

Bakelite synthetic resins were displayed in the only double-space booth in the show, with large, colorful cut-out letters spelling the corporate name across the two of the two niches. Glass containers of the principal products were arranged on shelves with back lighting effects. A series of panels showed weathering tests of the company's products at Florida tide level, on the Florida land racks and on the Bloomfield, N. J., roof station. -There was another series showing the effects of a two-and-a-half year Bloomfield roof test of Bakelite products compared with six different types of commercial paints. Percentages of the component parts of the vehicle content were changed to further heighten interest in the demonstration. The display was in charge of R. A. Brenneck, V. H. Turkington, and C. R. Given; other representatives were Dr. R. J. Moore, Howard Smith, and Allan Brown.

Booth 17

Beck, Koller & Co.

Lithographed labels in many languages and from many lands, shown in this exhibit, indicated the widespread use of the products of this company, chief of which are Beckacite and Beckosols. The labels were arranged on the sidewalls, flanking a central display of a fan-like arrangement of "By Gum," house organ of the concern, copies of which were distributed at the booth. E. S. Dickens, sales and advertising manager; H. M. Johnson, of the laboratories; and S. H. Stewart, Chicago sales representative, were in attendance. "It's thrifty to buy quality" was the booth's slogan.

Booth 19

Harshaw Chemical Company

Permanent color matching panels in vitreous enamel fired onto a sheet-iron base, which this company is making for some of its paint trade clients, were on display in this exhibit, which also was devoted to the driers, salts, and pigments put out. W. J. Harshaw, head of the company, was on from Cleveland, and other representatives on hand were D. Chase, G. D. Sinclair, and E. Peterson, Chicago. They stated that the permanent color panels were proving of help in production problems.

Booth 20

Paramet Chemical Corporation
Strook & Wittenberg Corporation

Paramet pale ester gums, various classifications of Esterol, specimens of Paranol and of Para-Dura were here arranged in an attractive presentation, sponsored by the two companies. Gums of several types and grades also were on view. In addition to the specimen jars there were a number of test panels for inspection by visitors, who received a brochure telling of the pioneer research work of the Paramet company since its establishment in 1920 and of the service record of the selling organization, Stroock & Wittenberg. A. J. Wittenberg and H. A. Passof were in charge.

Booth 21

Falk & Co.

Bottles and brilliantly illuminated tubes of Falkovar oils and soybean oils were on view in this booth, which also had a display of paints in which the Falkovar products were used. The booth was in charge of L. J. Reizenstein, president, from Pittsburgh; David Lewis and James M. O'Hara, Chicago.

Booth 22

American Gum Importers Association

C. H. Allen was again in charge of the exhibit of this association, which showed congo gums, dammar gums, East India gums, kauri gums, macassar gums, and Pontianak, all in a variety of gradations. The association is having the Hilton-Davis Company conduct a research program to improve methods of using, uniformity, and general varnish making characteristics of the natural gums. Test panels showing comparisons between natural gum varnishes and those from synthetic resins were on view at the display.

Booth 23

George S. Mepham & Co.
C. K. Williams & Co.

Here was a colorful display, the chief portion of which featured the equipment for manufacture of brown iron oxide. A rotating spotlight with a screen of the primaries threw these colors on a white circle between the two firm names. There were specimens of, and brochures explaining, Azure Black, a blue-tone carbon pigment; Spectrone, a black for enamels, lacquers and varnishes; and Raven Black, a pigment for exterior finishes. Allen K. Thayer, of the Williams company, was in attendance, as was Joseph W. Ayers.

Booth 24

Nuodex Products, Inc.

Paint and varnish driers in various forms and other organic metallic salts of interest to paint and varnish production men were shown by this company, which was represented by Arthur Minich, chief chemist, and Leo Roon, vice-president. As was the case last year, this booth was notable for its colorful presentation of its driers, with apparatus designed to show stability and other properties.

Booth 25

Lacta Separator Company

A cross-section of one of this company's clarifiers for varnish, lacquer, enamel, and other work was shown in an illustration in this booth, while one of the machines, model 30 D, was installed for inspection. C. N. Phelps and H. M. DeBoo explained the mechanisms to visitors.

Booth 26

Reichard-Coulston, Inc.

Toners, lakes, and other pigmenting colors were on display. Coating panels

were also on view, while statistical records showed the results of the application of materials containing the pigments. J. W. Bossert and George H. Erwin were in charge.

Booth 27

Wheeling Corrugating Company

Wheeling steel drums, "manufactured by one company from mine to market," with the clamp ring feature, were demonstrated in this exhibit by Theodore Humphrey and J. E. Boddy. There is a wide choice of types and sizes in these containers, while a modern lithographing plant permits the decoration of the cans to suit the desires of any customer. The company showed standard types of embossing and numbering, but is prepared to furnish any style.

Booth 28

John D. Lewis, Inc.

Stephen Babcock, the sales manager, actually greeted visitors to the Lewis enclosure, but long before they reached there they had figuratively shaken the moving hand of the Lewis "advertising man,' who with his boyish complexion and genial smile was visible from all parts of the room. Displays of enamels and varnishes made with Lewisol resins were shown.

Booth 29

Scientific Section Paint and Varnish Industry

The Scientific Section of the American Paint and Varnish Manufacturers Association had an interesting display showing "some of the 1,200 dry colors examined in 1933 for the members." Physical tests included oil absorption, specific gravity, and fineness of every available pigment in America. Included in the exhibition of apparatus were a new method for the determination of organic thinners in paints and varnishes, the Hart impact and adhesion tester, the Gardner mobilometer, and the chainomatic addition to the Hart evaporation balance. Master color standards and master viscosity standards also were shown. Dr. H. A. Gardner later explained to the association convention in detail about the work of this section, of which he is director. J. R. Stewart was in attendance at the booth.

Booth 30

U. S. Forest Products Laboratory

Splendidly graphic presentations of what happens to paint on wood when water gets in through poor joints or by condensation in cold weather were on view in this striking display of the work being conducted at Madison, Wis., under the direction of Dr. F. L. Browne, chief chemist, who was present throughout the show to explain the nature and extent of the experiments. There were charts and diagrams showing the factors of normal service which should be expected of house paints, emphasis being placed on the moisture-excluding properties of paints as a requisite for protection. Publica-

tions available through the laboratories were displayed and listed.

Miscellaneous

Special spaces were provided for displays of the panels, charts and apparatus used by the New England club, the Pittsburgh club, and the Baltimore club in the presentation of their technical papers; also, for the showing of measures, funnels, and strainers by the Midland Specialties Company.

Those Who Attended the Chicago Meetings

Adams, R. F., Paint, Oil and Chemical Review, Chicago (M, F).
Adderly, J. C., James B. Sipe Company, Pittsburgh (M).
Ahlman, L. F., Harshaw Chemical Company, Cleveland (M).
Aldrich, Harold L., Arco Company, Cleveland (F).
Allegaert, John, United Color & Pigment Company, Newark (F.
Allen, A. O., A. C. Horn Company, Long Island City (F).
Allen, C. H., American Gum Importers' Association, New York (F).
Allen, Edw. E., Edw. E. Allen Mfg. Company, Chicago (M).
Allen, E. W., Bradshaw-Praeger Company, Chicago (M).
Alpers, W. A., Cleveland Paint & Color Company, Cleveland (M).
Andrews, W. H., American Cyanamid & Chemical Company, Cleveland (M, F).
Anderson, George, Anaconda Sales Company, New York (F).
Anderson, Roy B., Brooklyn Varnish Company, Brooklyn (F).
Androvette, E. E., E. E. Androvette, New York (M).
Armstrong, C. A., S. C. Johnson & Son, Racine, Wis. (M).
Armstrong, W. Grier, Certain-teed Products Corporation, St. Louis (F).
Arnstein, M., Arnesto Paint Company, New York (M, F).
Arrington, W. T., Harry C. Smith Company, Memphis (M).
Atwood, F. C., Atlantic Gypsum Products Corporation, Boston (M, F).
Atwood, W. R., Canadian Industries, Ltd., Toronto (M).
Auchincloss, W. S., Oil, Paint and Drug Reporter, New York (M, F).
Ayers, Joseph W., C. K. Williams & Company, Easton, Pa. (F).
Ayrault, John, Jr., Larkin Company, Buffalo (M).
Babcock, Stephen, John D. Lewis, Inc., Providence (M, F).
Baechle, J. E., American Can Company, Chicago (M).
Baker, Enos H., Binney & Smith, Akron, Ohio (M).
Baldwin, C. M., United Carbon Company, Chicago (F).
Ballester, A. G., Boston Varnish Company, Evanston, Ill. (M).
Barth, Elmer W., Edw. E. Allen Manufacturing Company, Chicago (M).
Barth, George, Elder & Jenks, Philadelphia (M).
Bautz, Robert A., Robert A. Bautz Company, Chicago (M).
Bayer, H. L., Spencer Kellogg & Sons Sales Corporation, Chicago (M, F).
Beard, W. H., Davis Paint Company, Kansas City (M).
Beatty, C. F., Socony-Vacuum Specialties, New York (M).
Beer, Fred A., Western Dry Color Company, Chicago (M, F).
Beirne, T. J., Metal Package Corporation, Chicago (M).
Bennett, J. C., Wilson & Bennett Company, Chicago (M, F).
Bennett, M. G., Samuel Cabot, Inc., Boston (M).
Bennett, Myron T., New Jersey Zinc Sales Company, Chicago (M).
Bennett, R. J., Berry Bros., Inc., Chicago (M).
Bennett, S. A., Wilson & Bennett Mfg. Company, Chicago (M, F).
Benson, K. Y., Aulcraft Paints, Ltd., Toronto (M).
Bernhardt, David, New Orleans Paint & Color Company, New Orleans (M).
Biddle, O. J., Biddle Company, St. Louis (M).
Bidlack, V., Norfolk Paint & Varnish Company, Norfolk Downs, Mass. (F).
Bigelow, F. R., General Paint & Varnish Company, Chicago (M).
Birch, Wm. R., Schuele & Company, Chicago (M).
Black, A. T., Hockaday, Inc., Chicago (M).
Black, C. H., American Can Company, New York (M).
Black, R. M., Smith-Alsop Paint & Varnish Company, Decatur, Ill. (M).
Blatherwick, L. N., Paint, Oil and Chemical Review, Chicago (M, F).
Bledsoe, H. D., D. C. Franche & Company, Chicago (F).
Block, J., Fred L. Lavenburg Company, Chicago (M, F).
Bloomsburg, H. E., Standard Oil Company of New Jersey, Newark (F).
Bluthardt, O. D., R-B-H Lacquer Base Company, Bound Brook, N. J. (M).
Boddy, J. E., Wheeling Corrugated Company, Wheeling (F).
Boetter, W. H., American Can Company, Chicago (M).
Boggess, Robert C., Spencer Kellogg & Sons Sales Corporation, Buffalo (M).
Bonn'e, Sevier, Kentucky Color and Chemical Company, Louisville (M).
Bonney, Robert D., Congoleum-Nairn, Inc., Marcus Hook, Pa. (F).
Booge, Krebs Pigment & Color Company, Newport, Del. (F).
Booker, S. E., Peaslee-Gaulbert Paint and Varnish Company, Louisville (M).
Bossert, J. W., Reichard-Coulston, Inc., New York (M, F).
Boughton, E. W., R. T. Vanderbilt Company, Inc., New York (F).
Bourland, Harry B., Red Spot Paint & Varnish Company, Evansville, Ind. (M).
Bownes, Frank, Frank Bownes Company, Chelsea, Mass. (M).
Bradshaw, R. S., Bradshaw-Praeger Company, Chicago (M).
Breckenridge, K. S., American Can Company, Chicago (M).
Brenneck, Bakelite Corporation, Chicago (F).
Briner, Geo. A., American Paint & Supply Company, Dallas (F).
Brooke, Fred L., Fred L. Brooke Company, Chicago (M).
Brown, Andrew, Andrew Brown Company, Los Angeles (F).
Brown, Arthur F., Imperial Color Works, Glens Falls, N. Y. (F).
Brown, Gordon, Bakelite Corporation, New York (F).
Brown, H. E., New Jersey Zinc Company, Chicago (F).
Brown, R. R., Barrett Varnish Company, Chicago (M).
Brown, R. R., jr., Barrett Varnish Company, Chicago (M).
Browne, F. L., U. S. Forest Products Laboratories, Madison, Wis. (F).
Brownell, A. W., American Paint Journal, New York (M).
Brunkow, O. R., Commercial Solvents Corporation, Terre Haute, Ind. (F).
Bullington, R. Mc., Bullington Paint Company, Richmond, Va. (M).
Bunting, C. C., John P. Cochran Company, Cleveland (M).
Burnside, F. W., L. N. Jackson & Company, Inc., New York (M).
Bush, E. J., International Society of Master Painters and Decorators, Peoria, Ill. (M).
Byrnes, Jas. W., James W. Byrnes Sales Corporation, New York (M).
Callahan, P. H., Louisville Varnish Company, Louisville (M).
Calo, John H., General Naval Stores Company, Chicago (F).
Calo, P. E., General Naval Stores Company, Chicago (M).
Came, C. L., Resinous Products & Chemical Company, Philadelphia (F).
Campbell, Donald, Hooker Glass & Paint Mfg. Company, Chicago (F).
Campbell, T. J., Berry Bros., Detroit (M).
Campbell, W. R., Marietta Paint & Color Company, Marietta, Ohio (M).
Carlisle, V. D. Standard Varnish Works, Chicago (F).
Carrier, C. F., G. S. Robins & Company, St. Louis (F).
Carroll, H. H., H. A. Carroll & Company, Memphis (M).
Carter, F. M., National Lead Company, New York (M).
Cary, Robert, Geo. B. Cary & Son, Inc., Chicago (M).
Case, F. O., Anaconda Zinc Company, E. Chicago, Ind. (M).
Casey, S. R., Mound City Paint & Color Company, St. Louis (M).
Cavanaugh, J. F., Thompson-Hayward Chemical Company, Kansas City (M).
Chamberlain, A. J., Geuder-Paeschke & Frey Company, Milwaukee (M).
Chamberlin, H. M., Lowe Bros. Company, Ltd., Toronto (F).
Chapin, N. D., Billings-Chapin Company, Cleveland (M).
Chase, D., Harshaw Chemical Company, Cleveland (F).
Cheesman, Frank P., Cheesman-Elliot Company, Brooklyn (M).
Childs, Sam D., J. C. Pushee & Sons, Minneapolis (M).
Chinery, Frank L., Eagle-Picher Lead Company, Cincinnati (F).
Church, J. W., Pure Calcium Products Company, Painesville, Ohio (F).
Clark, C. W., E. I. du Pont de Nemours & Co., Everett, Mass. (F).
Clark, John T., Eagle-Picher Lead Company, Cincinnati (F).
Clarke, Frank, Pittsburgh Plate Glass Company, St. Louis (M).
Clarke, Kenneth E., Chas. R. Long, jr., Company, Louisville (M).
Clement, W. S., Clement Coverall Company, Camden, N. J. (M).
Coate, K. A., Calco Chemical Company, Chicago (M).
Coerdt, Robert H., Ansbacher-Siegle Corporation, Cleveland (M, F).
Cohen, A. J., C. A. Woolsey Paint & Color Company, Jersey City (F).
Colcord, H. F., American Can Company, New York (M).
Con'e, Samuel H., Sinclair Refining Company, Philadelphia (F).
Conklin, L. H., F. O. Odd & Company, Newark (M).
Conners, M. F., William Connors Paint Mfg. Company, Troy (M).
Connery, J. J., Mound City Paint & Color Company, St. Louis (M).
Conor, A. K., O. G., Innes Corporation, New York (M).
Constant, Harry W., United Sash & Door Company, Wichita (M).
Cook, Chas. R., Cook Paint & Varnish Company, Kansas City (M).
Cook, Russell P., Martin Varnish Company, Chicago (F).
Cooke, G. W., Resinous Products & Chemical Company, Chicago (F).
Coolahan, Robert A., Hercules Powder Company, Wilmington (F).
Coolidge, S. B., jr., Sherwin-Williams Company, Cleveland (M).
Coon, John H., Rennous-Kleinle Div. of Pittsburgh Plate Glass Company, Baltimore (M).
Copps, J. W., MetroNite Company, Milwaukee (M).
Corcoran, John C., Alabastine Company, Grand Rapids (M).
Cordon, E. B., Magic City Paint & Varnish Company, Birmingham (F).
Cotter, Roger H., Continental Can Company, Chicago (M).
Couchman, F. H., Ansbacher-Siegle Corporation, New York (M, F).
Cowen, M. I., Consolidated Products Company, New York (F).
Crandall, Paul B., Standard Varnish Works, Chicago (F).
Crary, A. V., Cincinnati Can Company, Inc., New York (M).
Critchfield, Don, Lincoln, Neb. (M).
Croal, Lewis R., International Paints, Ltd., Montreal (F).
Cronin, J. W., Krebs Pigment & Color Corporation, Newark (F).
Cullen, J. A., Independent Oil Company, St. Louis (F).
Currier, Edw. Co., Hansen Glass & Paint Company, Sioux City, Iowa (M).
Dabney, Wm. C., Jones Dabney Company, Louisville (M).
Dail, Wm. A., National Lead Company, Cincinnati (M).
Darby, Chas. A., Whiting Adams Company, Boston (M).
Darling, Fred S., American Zinc Sales Company, Columbus (F).
Daum, Adam E., Impervious Varnish Company, Pittsburgh (M, F).
Davidson, D., Eagle-Picher Lead Company, Cincinnati (F).
Davis, H. Braith, H. B. Davis Company, Baltimore (M, F).
Davoust, W., Collins-Davous Paint Mfg. Company, Dallas, Texas (M).
Day, Arthur, James B. Day & Company, Chicago (M).
Day, E. E., Standard Varnish Works, Chicago (M).
Day, Jas. B., James B. Day Company, Chicago (M).
DeBoo, H. M., Lacta Separator Company, Chicago (F).
DeBruler, W. L., A. Burdsal Company, Indianapolis (F).
deBrun, O. J. S., Egyptian Lacquer Mfg. Company, New York (M).
DeLacy, J. H., Metal Package Corporation, Chicago (M).
DeLore, C. P., DeLore Division, National Pigments & Chemical Company, St. Louis (M, F).
Denning, Matt, E. I. Du Pont de Nemours & Company, Wilmington (M).
Denew, Harlan A., American Zinc Sales Company, Columbus (F).
Derr, H. A., Marietta Paint & Color Company, Marietta, Ohio (F).
Derrick, P. J., Perry & Derrick Company, Cincinnati (M).
Dewar, John B., International Society of Master Painters and Decorators, Pittsburgh (M).
Dickens, E. S., Beck, Koller & Company, Inc., Detroit (F).
Dimlich, S. A., Imperial Color Works, Chicago (M, F).
Doggett, S. H., Stanley Doggett, Inc., New York (M).
Dohrmann, H. A., Midland Specialties Company, Chicago (F).
Donohue, W. F., E. I. Du Pont de Nemours & Company, Wilmington (M).

Dougherty, W. W., DeMert & Dougherty, Inc., Chicago (M).
Dowdy, Henry R., Dowdy Bros., Philadelphia (M).
Drake, Lewis L., Paint & Varnish Production Manager, New York (F).
Dresser, C. H., Anderson-Prichard Oil Corporation, Oklahoma City (M, F).
Duncan, L. Grant, Anaconda Zinc & Sales Company, Akron, Ohio (M).
Dunford, Geo. B., Inter-Coastal Paint Corporation, East St. Louis, Ill. (M).
Dunning, H. E., American Commercial Alcohol Corporation, Chicago (M).
Dunning, Stanley C., Muralo Company, Staten Island, N. Y. (M, F).
Dwight, Maitland, Edward Smith & Company, Long Island City, N. Y. (M).
Eastwood, Chas. W., U. S. Gutta Percha Paint Company, Providence (M).
Eberhardt, M. J., American Can Company, Chicago (M).
Eddy, P. S., Porter Paint Company, Louisville (F).
Edelstein, Edwin, Benj. Moore & Company, Cleveland (F).
Edgar, W. A., Klinger Paint Company, Cedar Rapids, Ia. (F).
Edgerly, D. W., Titanium Pigment Company, St. Louis (M, F).
Edwards, H. G., American Can Company, New York (M).
Eisenschimi, Otto, Scientific Oil Compounding Company, Chicago (M).
Elmer, Ralph R., Columbus Varnish Company, Cleveland (F).
Elser, G. T., Benj. Franklin Paint & Varnish Company, Philadelphia (F).
Elwang, W. B., Sanders Bros. Company, Richmond (M).
Emmons, Thornton, American Zinc Sales Company, Columbus, Ohio (M).
Emerson, Ralph W., Clean Up and Paint Up Campaign, Washington, D. C. (M).
Erickson, K. W., Titanium Pigment Company, Chicago (M, F).
Erwin, Geo. H., Reichard-Coulston, Inc., New York (F).
Esposito, J. R., Ault & Wiborg Corporation, New York (M).
Everett, R. H., Keystone Varnish Company, Brooklyn (M, F)
Evans, S. S., Enterprise Paint Mfg. Company, Chicago (F).
Fairbrother E. M., Mobile Paint Mfg. Company, Mobile (F).
Fasig, E. W., The Lowe Bros. Company, Dayton (F).
Fawkes, C. E., Pyroxylin Products, Inc., Chicago (F).
Fearnley, George, International Paints (Can), Ltd., Montreal (F).
Felton, Horace S., Felton Sibley & Company, Philadelphia (M).
Fenn, J. F., Continental Can Company, Chicago (M).
Fenton, W. F., Enterprise Paint Mfg. Company, Chicago (F).
Ferrell, R. W., Montgomery Ward & Company, Chicago (M, F).
Figgis, D. W., American Can Company, New York (M).
Fischer, R. F., Smith Alsop Paint & Varnish Company, Terre Haute, Ind. (F).
Fitzsimmons, Harry S., Krebs Pigment & Color Corporation, Newark (F).
Flemming, J. P., J. Lee Smith & Company, New York (M).
Flynn, T. A., Butler Flynn Paint Company, Washington, D. C. (M).
Follin, E. E., Standard Oil Company (Ind.), Chicago (F).
Foss, C. P., Wooster Brush Company, Wooster, Ohio (M).
Foss, W. R., Wooster Brush Company, Wooster, Ohio (M).
Fowler, R. J., Barnard, Porter & Remington, Rochester (M).
Foy, E. A., Foy Paint Company, Cincinnati (M).
Fredericks, G. W., Smith-Alsop Paint and Varnish Company, Terre Haute, Ind. (M).
Frederickson, J. A., John W. Masury & Son, Brooklyn (F).
Frendlich, J. C., Standard Oil Company of New Jersey, New York (M, F).
Friskorn, N. W., Ault & Wiborg Varnish Works, Cincinnati (M).
Fritsch, W. R., Kentucky Color & Chemical Company, Louisville (F).
Fritts, Frank A., Baker Paint and Varnish Company, New York (M).
Fuchs, Adolph, Imperial Color Works, Chicago (M, F).
Fulkerson, O. A., O'Brien Varnish Company, South Bend, Ind. (M).
Furman, E. L., James H. Furman Company, Chicago (M, F).
Gallagher, W. J., Alston Lucas Paint Company, Chicago (M).
Gardner, H. A., Institute of Paint and Varnish Research, Washington, D. C. (M, F).
Gardner, H. B., Atlantic Research Associates, Inc., Boston (F).
Gerke, Wm. W. H. Gerke, Indianapolis (M).
Gibson, H. O., Gibson-Homans Company, Cleveland (M).
Giebel, C. D., Krebs Pigment & Color Corporation, Cleveland (F).
Gillespie, John T., Gillespie-Rogers-Pyatt Company (New York (M).
Gillespie, Louis, Gillespie-Rogers-Pyatt Company, New York (M).
Gilman, W. D., W. D. Gilman, Chattanooga, Tenn. (M).
Ginn, C. E., Archer-Daniels-Midland Company, Cincinnati (M).
Given, C. R., Bakelite Corporation, New York (F).
Gnaedinger, R. J., James B. ipe & Company, Pittsburgh (F).
Goldschmidt, Chas., Charles Goldschmitt, Chicago (M).
Goldsmith, Mitchel, Armstrong Paint and Varnish Works, Chicago (M).
Good, Wm. F., Briggs-Maroney Company, Inc., Everett, Mass. (F).
Go't, E. N., Gilman Paint & Varnish Company, Chattanooga, Tenn. (F).
Graham, Linford, J. Meyer & ons, Philadelphia (F).
Grantz, R. L., Rockford Varnish Company, Rockford, Ill. (M)).
Green, Leslie C., Western Paint & Varnish Company, Duluth, Minn. (F).
Greene, Denison W., Oliver Johnson Company, Providence (M).
Greene, O. H., National Lead Company, St. Louis (M).
Griffin, C. W., Colonial Works, New York (M).
Grob, Adolph, Anderson-Pritchard Oil Corporation, Chicago (F).
Gustavson, M. M., Diamond Products Company, Chicago (M).
Hack, H. A., Roemhildt Company, Dayton (M).
Hagar, I. D., Titanium Pigment Company, New York (M, F).
Hager, Joseph A., Grand Rapids Varnish Corporation, Grand Rapids, Mich. (M).
Haines, E. H., Mrs., E. A. Haines, Chicago (M).
Hale, Wm. L., Debevoise Company, Brooklyn (F).
Hambrock, Louis, Thorp-Hambrock Company, Ltd., Montreal (M, F).
Hancock, E. H., Louisville Varnish Company, Louisville (M).
Hanline, Leon S., Hanline Bros., Baltimore (M, F).
Hanna, R. P., The Hanna Paint Mfg. Company, Columbus (M).
Haptonstall, P. A., jr., Standard Ultramarine Company, Huntington, W. Va. (M).
Harris, J. E., jr., J. E. Harris Company, Wooster, Ohio (M).
Harshaw, W. J., Harshaw Chemical Company, Cleveland (F).
Haskell, G. L., U. S. Industrial Alcohol, New York (M).
Hastings, John V., jr., Hastings & Company, Philadelphia (M).
Hauxhurst, G. T., S. Winterbourne & Company, New York (F).
Havey, Marshall L., New Jersey Zinc Company, New York (M).
Hawkes, Thomas G., Wetherill Company, Philadelphia (M).
Hawkins, R. L., Empire Varnish Company, Cleveland (M).
Hayt, W. H., Eagle-Picher Lead Company, Chicago (M, F).
Haze, H. S., Harry Haze, Inc., Chicago (M).
Heagstedt, C. H., Tousey Varnish Company, Chicago (M).
Heckel, G. B., National Paint, Oil & Varnish Association, Philadelphia (M, F).
Heckel, J. E., R. T. Vanderbilt Company, Inc., New York (M, F).
Hedlund, H. A., W. H. Barber Company, Chicago (M).
Heins, M. G., True-Tagg Paint Company, Memphis (M).
Helwig, F. S., Monad Paint & Varnish Company, Philadelphia (F).
Hemmingway, H. J., RBH Lacquer Base Company, Bound Brook, N. J. (M).
Hendrickson, H. E., S. Winterbourne & Company, New York (M).
Henlein, Carl A., Kentucky Color & Chemical Company, Louisville (F).
Hense, O. P., Eagle-Picher Lead Company, New York (F).
Hentzen, E. A., Wisconsin Paint Mfg. Company, Milwaukee (M).
Higgins, Wm. W., United Carbon Company, New York (M).
Hoag, E. R., Ditzler Color Company, Detroit (M).
Hock, W. W., Hock Paint & Chemical Works, Phoenixville, Pa. (M).
Hodgson, F. R., Eagle-Picher Lead Company Cincinnati (F).
Hoefle, Emil, C. K. Williamson Company, Easton, Pa. (F).
Hoffman, Harry J., Baker Castor Oil Company, New York (M, F).
Holkesvig, Chester A., Tropical Paint & Oil Company, Cleveland (F).
Holley, C. D., Sherwin-Williams Company, Detroit (F).
Hongler, Joseph A., Murray Oil Products Company, Philadelphia (M).
Hopkins, F. W., Murphy Varnish Company, Newark (F).
Horn, A. C., A. C. Horn Company, Long Island City (M).
Horn, Ed. N., A. C. Horn Company, Long Island City (M).
Horton, C. D., Moline Paint Company, Chicago (F).
Hose, W. O., Patterson-Sargent Company, Cleveland (F).
Hough, W. J., Wm. J. Hough Company, Chicago (M).
Howard, H. M., Thibaut & Walker Company, Long Island City (M).
Howard, O. McG., Paint, Oil & Chemical Review, Chicago (M, F).
Howe, H. E., American Can Company, Indianapolis (M).
Howe, Kenneth J., Thibaut & Walker Company, Long Island City (F).
Humphrey, Theo., Wheeling Corrugated Company, Wheeling, W. Va. (F).
Hursh, Robert, New Jersey Zinc Sales Company, New York (M).
Hursh, Robert, N. J. Zinc Company, New York (F).
Hurshburg, Milton, Hurshburg Paint Company, Baltimore (F).
Hussar, Andrew, Jewel Paint & Varnish Company, Chicago (M).
Ingram, J. E., Pittsburgh Plate Glass Company, Pittsburgh (M).
Innes, O. G., Innes & Company, Inc., New York (M).
Jacobs, A. E., Mac-Lac-Kasebier-Chatfield Corporation, New York (M).
Jameson, A. R., Pure Oil Company, Chicago (M, F).
Jarden, Wm. H., McCloskey Varnish Company, Philadelphia (M).
Jensen, Fred A., Fred A. Jensen Company, Chicago (M).
Jensen, H. J., Fred A. Stressen-Reuter, Chicago (M).
Johnson, Hugh G., Ohio Pail Company, Middlefield, Ohio (M).
Johnson, J. E., Spencer Kellogg & Sons Sales Corporation, Des Moines (M).
Johnson, Oscar F., S. H. Stewart Company, Chicago (F).
Joyce, D. P., Glidden Company, Cleveland (M).
Kamin, F. H., Billings-Chapin Company, Cleveland (M, F).
Kealy, John T., Binney & Smith Company, New York (F).
Keane, L. A., U. S. Industrial Alcohol Company, Detroit (M).
Keating, K. J., John A. Steen Varnish Company, Chicago (F).
Kehoe, W. J., Deep Rock Oil Company, Chicago (M).
Keister, James B., National Lead Company of California, San Francisco (M).
Kelley, Ralph D., Ralph D. Kelley, Chicago (M).
Kempf, Joseph, Wilson Imperial Company, Newark (M).
Kennedy, Paul S., Murphy Varnish Company, Newark (M).
Kent, Lonore, Miss, National Paint, Oil and Varnish Association, Washington (M).
Kicker, H. G., Certain-teed Products Corporation, St. Louis (F).
Kiefer, Laurence L., Paint & Varnish Industries, Washington, D. C. (M).
Kindig, R. A., Carborundum Company, Niagara Falls (F).
Kingsborough, Harry, Krebs Pigment & Color Corporation, Cleveland (M, F).
Kionka, E. F., Pioneer Mfg. Corporation, Cleveland (F).
Klebsattel, C. A., Advance Solvents & Chemical Corporation, New York (F).
Klechner, Harry L., Black Diamond Paint & Varnish Works, Cincinnati (F).
Klein, S., Calco Chemical Company, New York (M).
Klinger, W., Klinger Paint Company, Cedar Rapids, Ia. (M, F).
Klug, Robt. J., American Varnish Company, Chicago (F).
Knapp, George S., Imperial Color Works, Inc., Glens Falls, N. Y. (M, F).
Knauss, C. A., John Lucas & Co., Inc., Philadelphia (M, F).
Knoke, F. W., American Zinc Sales Company, St. Louis (M).
Kohr, D. A., Lowe Bros. Company, Dayton (M).
Kortum, J. E., Jones-Dabney Company, Louisville (F).
Krumbhaar, Dr. Wilhelm, Berlin, Germany (M, F).
Kuhn, H. J., Kuhn Paint & Varnish Works, Houston (M).
Kummerow, G. E., Continental Can Company, Inc., Chicago (M).
Kurfess, J. F., jr., Kurfess Paint Company, Louisville (M).
Kyger, E. R., Sewall Paint & Varnish Company, Kansas City (M).
LaCava, L. J., Continental Can Company, New York (M).
Lackey, H. E., Wilmington, Del. (M).
Ladd, A. V., Densol Paint Company, Cleveland (F).
Lane, Frederick Hall, Boston Varnish Company, New York (M, F).
Laughlin, Thomas, Edward Smith & Company, New York (F).
Lawson, J. H., Enterprise Paint Mfg. Company, Chicago (M).
Leake Austin, jr., Semet Solvay Company, New York (M).
Lechner, C. A., Advance Solvents & Chemical Corporation, New York (F).
Leep, W. M., William F. Zummach, Milwaukee (M).
Legg, John G., Integrity Paint Company, New Haven (M).
Lepan, Harry F., Wilson & Bennett Mfg. Company, Chicago (M).
Leveille, Edw. A., Chicago (M).
Levenhagen, R. W., Glidden Company, Cleveland (M).
Lewis, David, Falk & Company, Chicago (M).
Lewis, Edward J., J. Meyer & Sons, Chicago (M).
Lewis, Frank S., Frank S. Lewis, Chicago (M).
Lindos, Andrew, Pyroxylin Products, Inc., Chicago (F).
Lindsay, R. W., Pratt & Lambert, Inc., Buffalo (M).
Linnell, R. C., Illinois Paint Works, Chicago (F).
Linnell, W. M., Pittsburgh Plate Glass Company, Milwaukee (M).
Litter, D. H., D. H. Litter Company, New York (M, F).
Lodge, H. F., Geo. S. Mepham & Company, East St. Louis, Ill. (M).
Loebenberg, A. L., U. S. Industrial Chemical Company, New York (M).
Logan, L. B., Steen Varnish Company, Chicago (M).
Lord, James B., Boston Varnish Company, Boston (M).
Lotz, Paul L., Socony Vacuum Specialties, New York (F).
Loud, Fred E., Murray Oil Products Company, Philadelphia (M).
Loud, Warren S., Industrial Oil Products, Inc., Los Angeles (M, F).
Lundy, J. A., R. J. Brown Corp. of N. Y., New York (M).
Lurie, Jacob, Fiberloid Corporation, Indian Orchard, Mass. (F).
McClellan, H. C., North American Paint & Chemical Company, Ltd., Los Angeles (M, F).
McClelland, R. T., Fred A. Jensen Company Chicago (M).
McClintock, H. T., Mac-Lac-Kasebier-Chatfield Corporation, New York (M).
McConnell, T. J., Kolbe Paint Company, Cincinnati (M).
McCorkle, G. A., Krebs Pigment & Color Corporation, Newport, Del. (F).
McCrea, Jarvis S., Binney & Smith Company, New York (M).
McDaniel, Giles, McDaniel Paint & Varnish Company, Chicago (M).
McEwen, G. C., Imperial Varnish & Color Co., Ltd., Toronto (F).
McFadden, Thos. J., National Paint, Oil & Varnish Association, Washington (M).
McFarland, W. R., McMurtry Mfg. Company, Denver (M).
McGhee, Walter, Enterprise Stamping Company, McKees Rock, Pa. (M).
MacGlynn, J. E., Kinsey-Johnston Company, Cincinnati (M).
McGowan, H. P., W. H. Barber Company, Chicago (M).
McGregor, John R., Eagle-Picher Lead Company, Cincinnati (M, F).
MacPherson, R. P., Schenectady Varnish Company, Schenectady (M).
McIntyre, Will G., National Paint, Oil & Varnish Association, Boston (M).
McIver, Ed. H., Leland-Moore Paint & Oil Company, Charleston (M).
McKaig, Edgar S., Samuel H. French Paint Company, Philadelphia (M).
McKay, Chas. F., McKay Mfg. Company, St. Louis (M).
McKay, R. S., Dean & Barry Company, Columbus (M).
McLister, Frank, Kohler-McLister Company, Denver (M).
McMenamin, J. F., Felton-Sibley & Company, Philadelphia (F).
McNulty, Joseph A., Joseph A. McNulty Company, New York (M, F).
McNulty, Frank B., Joseph A. McNulty Company, New York (F).
Madison, R. E., Truscon Laboratories, Detroit (F).
Maloney, Edward F., E. I. duPont de Nemours & Co., Inc., Chicago (F).
Marks, W. F., National Lead Company, Milwaukee (M).
Maroney, W. K., Briggs-Maroney Company, Inc., Everett, Mass. (M).
Martin, J. F., Standard Oil Company (F).
Martin, Leon, Martin Varnish Company, Chicago (F).
Martin, S. F., Standard Oil Company (F).
Martin, Wells, Martin Varnish Company, Chicago (M).
Martin, Z. E., Martin Varnish Company, Chicago (M).
Marwin, E. W., Minnesota Linseed Oil Paint Company, St. Paul (F).
Maston, Willard E., Eagle-Picher Lead Company, Cincinnati (M).
Matthias, John, New Jersey Zinc Sales Company, Chicago (M).
Mathews, L. D., Marietta Paint Company, Columbus (M).
Matlack, R. W., George D. Wetherill Company, Philadelphia (M).
Matlack, Samuel R., George D. Wetherill Company, Philadelphia (M).
Mautz, B., Mautz Paint & Glass Company, Madison, Wisconsin (M).
Meldahl, M. A., American Varnish Company, Chicago (M).
Melum, H. A., Benj. Moore & Company, Chicago (M).
Melvin, Geo. A., Gillespie-Rogers-Pyatt Company, New York (M, F).
Merkin, M. J., Merkin Paint Company, New York (M).
Messinger, Geo. L., National Paint, Oil and Varnish Association, Washington (M).
Meyer, Fred L., J. Meyer & Sons, Philadelphia (M, F).
Michael, E. W., Chi-Namel Company, Cleveland (M).
Michel, Geo. J., C. A. Michel & Company, Pittsburgh (M).
Miles, G. H., National Paint, Oil and Varnish Association, Washington (M).
Mileti, Otto, Charles R. Long, jr. Company, Louisville (F).
Miller, G. Harry, Pacific Laboratories, Los Angeles (F).
Miller, H. J., McDougall-Butler Company, Inc., Buffalo (F).
Miller, Leon W., Barrett Company, New York (M).
Mills, A. P., DeSota Paint & Varnish Company, Memphis (F).
Minich, Arthur, Nuodex Products, Inc., Newark (F).
Minta, J. J., Advance Paint Company, Indianapolis (M).
Mitchell, J. A., A. Burdsal Company, Indianapolis (M).
Mohn, A., Midland Specialties Company, Chicago (F).
Moneypenny, T. F., Imperial Varnish & Color Company, Ltd., Toronto (M).
Moore, Robt. J., Bakelite Corporation, New York (F).
Morgan, L. E., Illinois Paint Works, Chicago (F).
Morpeth, W. R., Krebs Pigment & Color Corporation, Newark (M, F).
Morris, C. P., Binney & Smith Company, Philadelphia (M).
Morris, W. S., Archer-Daniels-Midland Company, Minneapolis (M).
Morsman, J. J., National Lead Company, Chicago (M).
Morton, C. J., New Jersey Zinc Company, Chicago (M).
Morton, E. E., Carpenter Morton Company, Boston (M).
Mueller, Alph., Wm. Zinsser & Company, Chicago (M).
Mueller, William, Commercial Solvents Corporation, New York (M).
Mullaly, A. L., Advance Solvents & Chemical Corporation, New York (F).
Munn, R. J., Lilly Varnish Company, Indianapolis (F).
Murphy, E. D., Metal Package Corporation, New York (M).
Murphy, Joseph S., Billings-Chapin Company, Cleveland (F).
Murray David, Craftex Company, Boston (M).
Nairne, J. I., Certain-Teed Products Corporation, St. Louis (M).
Neilson, R. T., National Lead Company, Chicago (M).
Nelson, Harley A., New Jersey Zinc Company, Palmerton, Pa. (F).
Nethercot, D. G., Dill Hough Company, St. Louis (M).
Neumann, R. M., New Jersey Zinc Sales Company, Chicago (M, F).
Nichols, W. D., Geo. S. Mepham & Company, East St. Louis, Ill. (F).
Niedt, A. E., Steelcote Mfg. Company, St. Louis (M).
Oakley, R. H., Oakley Paint Mfg. Company, Los Angeles (M).
O'Connor, C. J., Beck-Koller Company, Detroit (F).
O'Connor, C. J., Continental Can Company, Inc., New York, N. Y. (M).
O'Connor, Chas. T., General Plastics, Inc., North Tonawanda, N. Y. (F).
Olsen, John M., Minn. Specialties Prod. Company, St. Paul (F).
O'Shea, Wm. J., Patterson-Sargent Company, Cleveland (F).
Osterlund, G. R., Tar Distilling Company, Cleveland (M).
Otley, Thomas F., Indiana Indestructible Paint Company, Chicago (M).
Page, Frank A., Frank A. Page & Company, Chicago (M).
Palmer, Fred C., N. J. Zinc Company, New York (F)
Paramet, R. A., Krebs Pigment & Color Corporation, Cleveland (F).
Parrott, Chas. W., Lowe Bros. Company, Dayton (M).
Passof, H. A., Parent Chemical Corporation, Long Island City (F).
Passonno, Fred J., M. G. Stoneman & Son, Albany (M).
Patterson, J. K., Patterson-Sargent Company, Cleveland (M).
Patterson, W. A., W. S. Patterson Company, New York City (M).
Patton, J. D., Pittsburgh Plate Glass Company, Milwaukee (M).
Paulsen, H. A., Armstrong Paint & Varnish Works, Chicago (F).
Pearce, W. T., Resinous Products & Chemical Company, Philadelphia (F).
Pearson, H. W., United States Kalsomine Company, New York (M).
Pennebaker, E. H., Imperial Color Works, St. Louis (M).
Penny, R. J., Carborundum Company, Niagara Falls (F).
Perry, Raymond A., Warren Paint & Color Company, Asheville, N. C. (F).
Peters, E. J., Pittsburgh Plate Glass Company, Milwaukee (M).
Peters, E. V., St. Joseph Lead Company, New York (M).
Petersen, T. H., Harshaw Chemical Company, Cleveland (F).
Phelan, Wm. J., Phelan-Faust Paint Company, St. Louis, Mo. (M).
Phelps, C. N., Lacta Separator Company, Chicago (F).
Phelps, Z., Krebs Pigment & Color Corporation, Newport, Del. (F).
Phillips, Clyde, Commercial Solvents Corporation, Terre Haute (F).
Phillips, Elliott S., Devoe & Raynolds Company, New York (M).
Phillips, L., Valentine & Company, New York (M).
Pickard, Glen H., Chicago (F).
Pine, Milton K., Muralo Company, Chicago (M, F).
Pinney, H. A., American Can Company, Chicago (M).
Pitt, W. J., DeVilbiss Mfg. Company, Toledo (M).
Plumb, R. A., Truscon Laboratories, Detroit (M).
Pohl, h. J., Oxidermo Products, Inc., Detroit (F).
Porter, Boone, Porter Paint Company, Louisville (M).
Porter, Ellis L., Carter Paint Company, Liberty, Indiana (M).
Praeger, Charles H., Bradshaw-Praeger & Company, Chicago (M).
Pratt, Malcolm F., Standard Oil Company of N. J., New York (F).
Price, Burr, Oil, Paint & Drug Reporter, New York (M).
Price, Thompson, jr., Seidlitz Paint & Varnish Company, Kansas City (F).
Priest, G. H., jr., American Paint Journal, St. Louis (M, F).
Prince Robert E., James B. Day & Co., Chicago (F).
Probeck, E. J., Jones-Dabney Company, Louisville (F).
Procter, T. R., Procter & Johnson, Chicago (M).
Puffer, H. E., American Commercial Alcohol Corporation, Philadelphia (M)
Puterbaugh, Lon, Thresher Varnish Company, Dayton (F).
Rainey, R. F., Pittsburgh Paint Supply Company, Pittsburgh (M).
Ransom, H. E., Ault & Wiborg Company of Canada, Ltd., Toronto (M).
Raw, C. F., Dr., McCloskey Varnish Company, Philadelphia (M).
Raynolds, Paul B., John W. Masury & Son, Chicago (M).
Ready, W. J., American Zinc Company, Chicago (F).
Reardon, J., Vincent Reardon Company, St. Louis (M).
Reardon, R. E., The Reardon Company, Chicago (M).
Redheffer, F. N., Great Western Paint Mfg. Company, Kansas City (M).
Reed, R. M., Western Dry Color Company, Chicago (M).
Reeves, S. French, John T. Lewis & Bros Company, Philadelphia (M).
Reifschneider, John, Reifschneider Paint and Glass Company, Omaha (M).
Reizenstein, Louis J., Falk & Company, Pittsburgh (M, F).
Reque, John L., National Lead Company, Chicago (M).
Rise, Herbert W., U. S. Gutta Percha Paint Company, Providence, R. I. (M).
Rice, Wayland W., U. S. Gutta Percha Paint Company, Providence (F).
Richardson, E. G., Shell Petroleum Corporation, St. Louis (F).
Richter, W., E. I. DuPont de Nemours & Co., Wilmington (M).
Riker, H. S., Texas Mining & Smelting Company, New York.
Rile, J. H., jr. (M).
Ritchie, William A., Standard Ultramarine Company, Huntington, W. Va. (M).
Robbins, Clarence, A. Robbins Varnish Company, St. Louis (M).
Roberts, Perley J., Carpenter-Morton Company, Everett, Mass. (F).

Roberts, W. B., Aluminum Company of America, Pittsburgh (M).
Robertson, D. W., Titanium Pigment Company, New York (F).
Robson, E. O. Standard Varnish Works, Chicago (M).
Rockwell, Fletcher W., St. Louis Smelting & Refining Works, New York (M).
Roettker, B. H., The B. H. Roettker Company, Cincinnati (M).
Rob, Chas. J., Wilson-Imperial Company, Newark (M).
Roman, B. F., National Chemical & Manufacturing Company, Chicago (M).
Rommel, Carl P., Bradley & Vrooman Company, Chicago (F).
Roon, Leo, Nuodex Products Company, Newark (F).
Roosevelt, R. M., Eagle-Picher Lead Company, New York (M).
Rose, Edgar S., Sun Oil Company, Philadelphia (F).
Rosen, M. A., Mantrose Corporation, Brooklyn, N. Y. (M).
Ross, Edgar S., Sun Oil Company, Philadelphia (M).
Rowe, Harold, National Lead Company, New York (M).
Rubek, D. D., Anderson-Prichard Oil Corporation, Chicago (F).
Rubin, Isidor, Rubico Brush Mfg. Company, Inc., New York (M).
Ruppert, E. W., National Lead Company, Milwaukee (M).
Rutheford, J. J., Bradshaw-Praeger Company, Chicago (M).
Ryan, L. W., United Color & Pigment Company, Newark (F).
Rydstrom, C. L., Rockford Varnish Company, Rockford, Ill. (F).
Sampson, F. J. Sampson Paint & Color Co., Richmond, Va. (M).
Sampson, H. G., Wm. J. Hough Company, Chicago (M).
Sanders, Stuart, Sanders Bros., Richmond, Va. (M).
Sanderson, John McE., American Cyanamid & Chemical Corporation, New York (F).
Sargent, H. G., Harry Sargent Paint Company, Indianapolis (M).
Saunders, A. T., Truscon Laboratories, Detroit (F).
Sawyer, F. K., Werner G. Smith Company, Cleveland (M).
Schaefer, Ralph F., Schaefer & Company, Louisville (M).
Schantz, J. M., Hercules Powder Company, Wilmington (F).
Schelling, Arthur A., John W. Masury & Company, Brooklyn (F).
Schinke, Carl H., Bisbee Linseed Company, Chicago Heights (M).
Schneider, Geo. W., jr., Foy Paint Company, Inc., Cincinnati (M).
Schoales, W. W., Dominion Linseed Oil Company, Toronto (M).
Schreiber, Harry, Krebs Pigment & Color Corporation, Chicago (M).
Schumann, A. G., Hilo Varnish Company, Brooklyn (M).
Schumann, Carl J., Hilo Varnish Corporation, Brooklyn (M).
Schumann, Frank M., Hilo Varnish Corp., Brooklyn (F).
Schwalb, William L., Hilo Varnish Corporation, Brooklyn (F).
Schwartz, C. R., Pyramid Paint Company (F).
Schwartz, W. O., Patek Bros., Inc., Milwaukee (M).
Seder, Fred H., Hooker Glass & Paint Mfg. Company, Chicago (F).
Seebach, E. J., Eagle-Picher Lead Company, Chicago (F).
Seidlitz, C. N., Seidlitz Paint & Varnish Company, Kansas City (M).
Sellon, John, American Zinc Sales Company, New York (F).
Shade, Curtis Amos, American Varnish Company, Chicago (F).
Shannon, Robert K., National Paint, Oil & Varnish Association, Washington (M).
Shive, R. S., Arco Company, Cleveland (F).
Shuger, Herman H., Baltimore Paint & Color Works, Baltimore (F).
Sidford, H. G., National Lead Company, New York (M).
Silberman, Israel, Paragon Paint & Varnish Corporation, Long Island City (M).
Sime, W. W., U. S. Color Card Company, Chicago (M).
Simms, C. W., Wabash Products Company, Terre Haute, Ind. (F).
Sinclair, Gordon D., Harshaw Chemical Company, Chicago (M, F).
Sinclair, H. Murray, Malcolm Sinclair Company, Ltd., Toronto (F).
Slocum, Clarence W., Beckwith-Chandler Company, Newark (M).
Smith, Arnold, Winnipeg, Canada (M).
Smith, Byron J., Indianapolis Paint & Color Company, Indianapolis (M).
Smith, Harry C., Harry C. Smith Company, Memphis (M).
Smith, Howard, Bakelite Corporation, Cleveland (F).
Smith, H. Vernon, McDougall-Butler Company, Inc., Buffalo (M, F).
Smith, Norman L., Binney & Smith Company, New York (F).
Smith, Robert J., Indianapolis Paint & Color Company, Indianapolis (F).
Sodemann, A. E., Krebs Pigment & Color Corporation, Newark (F).
Solinsky, R. S., Continental Can Company, New York (M).
Somers, Andrew L., Fred L. Lavanburg Company, New York (M).
Somers, Fred L., Fred L. Lacanburg & Company, New York (M).
Somer, P., North Bergen Paint & Varnish Company, North Bergen, N. J. (M).
Sorenson, S. O., Archer-Daniels-Midland Company, Minneapolis (F).
Sohl, George T., Resinous Products & Chemical Company, Cleveland (F).
Sorrick, K. M., Oxidermo Products, Inc., Detroit (F).
Sparrow, Eugene E., Imperial Varnish & Color Company, Ltd., Toronto (F).
Spaulding, D. E., Payson Varnish Company, New York City (M).
Spitz, R. J., General Naval Stores Company, New York (M, F).
Spruance, Gilbert, Gilbert Spruance Company, Philadelphia (M).
Stanton, A. H., U. S. Color Card Company, Chicago (M).
Stark, R. C., Pratt & Lambert, Inc., Buffalo (F).
Statler, Earl C., United States Bronze Powder Works, Inc., Chicago (M).
Stauderman, A. E., Devoe & Raynolds Company, New York (F).
Sterling, R. J., U. S. Gypsum Company, Chicago (M).
Stevenson, W. B., Shell Petroleum Corp., Chicago (F).
Stewart, James K., Anderson-Prichard Oil Corporation, Chicago (F).
Stewart, Jeffrey R., Institute of Paint & Varnish Research, Washington (M, F).
Stewart, S. H., S. H. Stewart Company, Chicago (M, F).
Stocking, A. E., DeLore Division, National Pigments & Chemical Company, St. Louis (F).
Stodder, C. K., Savogran Company, Boston (M).
Stoffel, A. F., S. C. Johnson & Son, Racine (M).
Stoneman, Wm. H., M. G. Stoneman & Son, Albany (M).
Stressen-Reuter, Fred A., Fred A. Stressen Reuter, Chicago (M).
Sullivan, Charles L., jr., Thresher Varnish Company, Dayton (M, F).
Sutherland, George, H. B. Davis Company, Baltimore (F).
Sullivan, Phil A., Phil A. Sullivan, St. Louis (M).
Sulzberger, Frank L., Enterprise Paint Manufacturing Company, Chicago (M).
Swales, Herbert A., Spencer Kellogg & Sons Sales Corporation, Chicago (M).
Swanson, Oscar H., Swanson Wallpaper & Paint Company, Mankato, Minn. (M).
Sweney, W. H., St. Paul White Lead & Oil Company, St. Paul (M).
Thayer, Allyn K., C. K. Williams & Company, Easton, Pa. (F).
Thomas, A. B., W. H. Kemp Company, New York (M).
Thomas, S. S., Western Rosin & Turpentine Company, Detroit (M).
Theurer, Frederick L., Pittsburgh Plate Glass Company, Milwaukee (F).
Thompson, C. T., Thompson-Hayward Company, Kansas City (M).
Thompson, J. V., Thompson & Company, Pittsburgh) (M).
Tilgner, Charles, Olsen & Tilgner Mfg. Company, Chicago (M, F).
Tobey, Virgil W., Boston Varnish Company, Everett, Mass. (F).
Todd, J. D., Sherwin-Williams Company, Cleveland (M, F).
Towns, George P., George P. Towns, Buffalo (M).
Trask, Arthur C., Arthur C. Trask Company, Chicago (M).
Trask, Warren T., Geuder-Paeschke & Frey Company, Chicago (M).
Trigg, Ernest T., John Lucas & Company, Philadelphia (M).
Trimmer, M. R., American Agricultural Chemical Company, Detroit (F).
Trott, L. H., New Jersey Zinc Company, New York (F).
Troxell, E. A., Publican Commercial Alcohol Company, Chicago (M).
Truxal, Geo. W., Cleveland-Cliffs Iron Company, Cleveland (M).
Tumpeer, Jos. J., Wishnick-Tumpeer, Inc., Chicago (M).
Turner, G. L., Truscon Laboratories, Detroit (M).
Turkington, V. H., Bakelite Corporation, New York (F).
Valance, Edward H., Spencer Kellogg & Sons, Inc., Buffalo (F).
Van Allen, L. R., L. R. Van Allen & Company, Chicago (M).
Van Houten, C. B., W. P. Fuller & Company, Portland, Ore. (M).
Vernon, Franklin, Savogran Company, Washington (M).
Volt, Frank T., French-Wolf Paint Products Corporation, Philadelphia (F).
Voss, A. F., American Paint Journal, St. Louis (M, F).
Waga, J. C., Patterson-Sargent Company, Cleveland (F).
Walker, R. O., Thibaut & Walker Company, Long Island City (M).
Wampler, Rollin H., Southern Varnish Corporation (F).
Wandtke, A. P., Calco Chemical Company, Bound Brook, N. J. (M).
Watson, J. D., Watson-Standard Company, Pittsburgh (M).
Weaver, E. W., Spencer Kellogg & Sons Sales Corporation, St. Louis (M).
Webster, H. E., Pratt & Lambert, Inc., Buffalo (M).
Werthan, S., New Jersey Zinc Company, Palmerton, Pa. (F).
Wertz, F. A., Varcraft Works, Inc., Pottstown, Pa. (M).
Wetherill, A. P., Wetherill & Bros., Philadelphia (M).
Wharry, G. A., G. A. Wharry & Company, New York (M).
Whitescarver, Jas. F., U. S. Industrial Alcohol Company, Baltimore (M).
Whiteway, P. J., George D. Wetherill & Company, Philadelphia (M, F).
Whittam, F. F., John Lucas & Company, Inc., Philadelphia (M).
Wiesel, J. B., Hercules Powder Company, Wilmington (M, F).
Wilkinson, Horatio L., Debevoise Company, Brooklyn (M).
Wilkinson, William H., Oliver Johnson & Company, Inc., Providence (F).
Williams, H. J., General Plastics, Inc., North Tonawanda, N. Y. (M, F).
Williams, H. L., Acorn Refining Company, Cleveland (F).
Willis, C. W., George S. Mepham & Company, Chicago (F).
Willisch, A. W., Deep Rock Oil Corporation, Chicago (M).
Wilson, E. F., E. H. Haines, Chicago (M).
Wishnick, Robert, Wishnick-Trumpeer, Inc., New York (M).
Wittenberg, A. J., Stroock & Wittenberg Corporation, New York (M, F).
Wood, John G., The Boydell Bros. Company, Detroit (M).
Wood, J. H., Standard Varnish Works, Chicago (M).
Woodlock, H. J., Schroeder Paint & Glass Company, Detroit (M).
Woolsey, Harry, C. A. Woolsey Paint & Color Company, Jersey City (M).
Wright, Fred C., Barrett Varnish Company, Chicago (F).
Wurtele, V., Minnesota Linseed Oil Paint Company, Minneapolis (M).
Yarnall, Walter P., Yarnall Paint Company, Philadelphia (M).
Zeissler, Herman W., Edmonton Paint & Glass, Ltd., Edmonton, Canada (F).
Zimmerman, Leon, Capitol Paint & Varnish Works, Chicago (M).
Zinsser, Rudolph, William Zinsser & Company, New York (M).
Zoller, Miles N., Eagle-Picher Lead Company, Cincinnati (M, F).
Zuck, Gordon D., Wilson & Bennett Mfg. Company, Chicago (F).

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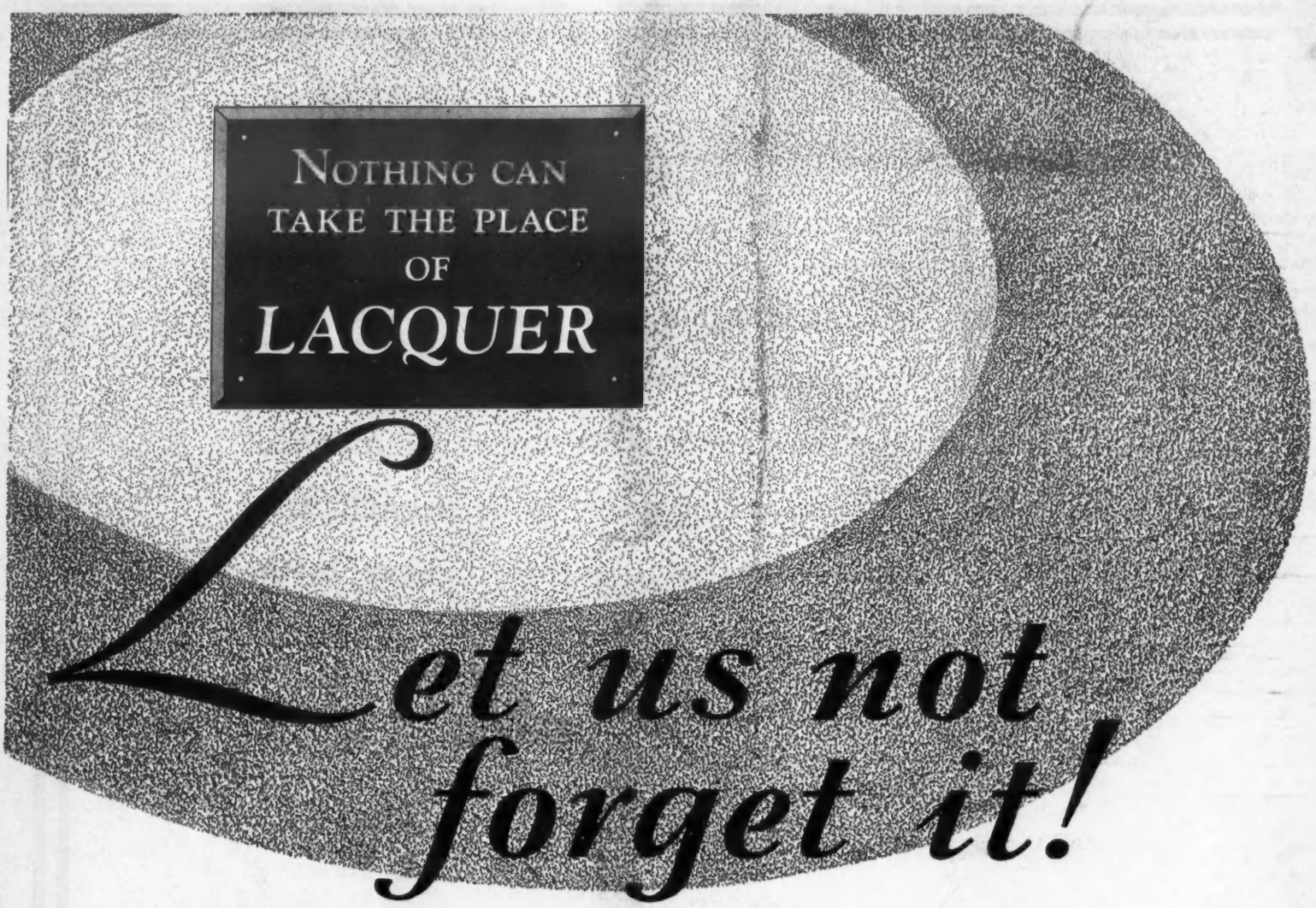

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